

# amateur radio



VOL. 49, No. 11

NOVEMBER 1981

## *FEATURED IN THIS ISSUE:*

- ★ AN ALUMINIUM WINCH-UP TOWER
- ★ A NEW REPEATER SITE
- ★ A TALE OF A TOWER
- ★ CW PROCEDURES AND TECHNIQUES

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# amateur radio

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## Cover Photo



Kathy Marsh VK5NKM in her unique shack at Coober Pedy — see page 46.

# Q S P

... - - - ... (.)  
S O H

If you read AR in detail, you may be aware that the VK2 Division is currently involved in legal discussions on behalf of an amateur and his application to install a tower for use in the normal pursuit of his hobby. The VK2 Division would appreciate help with the quite substantial costs in a legal discussion of this type and has opened a "lower fund" and welcomes all donations, of what ever you can afford, to this fund.

However, you may be unaware that the VK5 Division has also become deeply involved in discussions with various councils, and has accepted on behalf of its members, the task of continuing these negotiations with councils, and into court where necessary. They would also like financial help and have opened a "save our hobby fund" which now gives you some idea of the meaning of the Morse at the top of this item.

At the August Council Meeting of the VK4 Division, it was proposed that a donation of \$100.00 be made to each of the funds to indicate our financial and moral support to these Divisions, and it was also suggested Council Members may like to contribute as well to the funds. In a very short time, \$39.00 was on the table, to be split between the two funds, after Council Members not present at the meeting had the opportunity to contribute.

As everyone well knows, legal costs are not cheap — if you feel these Divisions have acted correctly, in accepting the opportunity to contest decisions by various Councils, and to contest these decisions in court if need be, please accept this opportunity to donate to both the funds what ever you can afford. If you disagree with the Division's actions, in my opinion, you may have the wrong hobby.

One final point — lawyers and courts work normal 9 a.m. to 5 p.m. days — the people from these Divisions engaged in these discussions are donating parts of their flexidays or holidays to talk to Councils or to appear in court — show your appreciation by donating funds to support their donations.

ALEX McDONALD VK4TE Federal Councillor

(Currently there are considerable problems in Victoria which could have wider implications — Fed. Pres.)

## WIRELESS INSTITUTE OF AUSTRALIA

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Divisional information (all broadcasts are on Sundays unless otherwise stated).

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Gen. Mtg. — 4th Tuesday, 19.30.

WA:

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Secretary — Mr. F. Parsonage VK6PF

Broadcasts — 3560, 7075, 14100, 14175 kHz, 28.47, 53.1 MHz, 2 metres Ch. 2 Perth, Ch. 6 Wagin, Time 0130Z.

Gen. Mtg. — 3rd Tuesday.

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VK2 — 14 Alchison St., Grows Nest, 2055 (Ph. (02) 43 5755 Mon. Tues & Thurs 9.45-13.45h).

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VK6 — G.P.O. Box 10, W. Perth, 6005.

VK7 — P.O. Box 1019, Launceston, 7250.

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Slow morse transmissions — most week-day evenings about 09.30Z onwards around 3550 kHz.

VK QSL BUREAU

The following is the official list of VK QSL Bureaus, all are inwards and outwards unless otherwise stated.

VK1 — QSL Officer, G.P.O. Box 45, Canberra, A.C.T. 2600.

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VK3 — Outwards QSL Bureau, Mr. R. R. Prowse VK3XY, 83 Brewer Road, Bentleigh, Vic. 3204.

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VK6 — QSL Bureau, Mr. J. Rumble VK6RU, G.P.O. Box F319, Perth, W.A. 6001.

VK7 — QSL Bureau, G.P.O. Box 371D, Hobart, Tas. 7501.

VK8 — QSL Bureau, G/- VK8HA, P.O. Box 1418, Darwin, N.T. 5794.

VK8, 0 — Federal QSL Bureau, Mr. N. R. Penfold VK8NE, 388 Huntriss Rd., Woodlands, W.A. 6018.





# Letter from the President

This special issue of AR has been posted direct to every known licensed amateur and club in Australia; it is the largest print-run undertaken in the 48 years of our magazine.

The recruiting of new members is of utmost importance if the Institute is to have the necessary resources to serve amateur radio properly.

There is no need for me to repeat here to you, the member, the advantages and benefits of belonging to the WIA — you have already made that decision and by so doing you have "contributed" to the consolidation of the activity in Australia.

Why then send recruiting material to you also? The answer is that we need "saturation coverage" for this campaign. Our records do not necessarily contain details of the most recently licensed amateurs. Also it is not necessary to be a licensed amateur to join the Institute — as an Associate.

In these areas we seek your help. We specially ask those of you who are in contact with prospective amateurs to introduce them to the WIA.

So let's all get behind this campaign. In the long run a larger Institute will not only help amateur radio in Australia and inter nationally, but will also spread the financial responsibility in a more equitable way.

If you want more recruiting information please contact your Division or the Executive Office in Melbourne.

73.

P. WOLFENDEN VK3KAU,  
Federal President.



## SERVICE PROBLEMS?

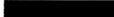
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## W I A N E W S

This monthly column, which has been a feature of AR for six years, sets out to inform members about current Institute and amateur radio matters at first hand. The subjects dealt with and reported on are very often on-going material which may or may not re-surface within months or longer.

For example, the WIANEWS column in AR of May quoted directly from correspondence conducted between the Institute and the Department of Communications on the subject of the use of the AX prefix under certain conditions. In WIANEWS of July future proposals for seeking the use of the AX call were also reported. These referred to NATIONAL and not LOCAL events. Nevertheless requests are being received which go outside existing parameters which cannot be supported at this time. Consequently the Executive has decided to submit an Agenda Item on this subject to the 1982 Federal Convention.

A proposal was received from the VK5 Division, backed up by most compelling reasons, that a NATIONAL SPECIAL PURPOSE FUND should be established. Such a fund would be applied to various specific purposes which are clearly matters of national importance to amateur radio and to radio amateurs. An example quoted was the question of costly legal representations recently conducted in VK5 and VK2 tower cases which are of a nature creating precedents in law in favour of amateur radio. The VK5 Division launched a "Save Our Hobby Fund" when it became clear that Court actions resulting from planning approvals being refused by Councils had to be challenged. Although the law on the subject varies from State to State, the effect of successful appeals in one State creates desirable precedents for use elsewhere.

It has now been suggested that this matter should be raised for discussion at the next Federal Convention.

Two new Federal officers have now been appointed. Bob McKernan VK4LG has been appointed FEDERAL INTRUDER WATCH CO-ORDINATOR to replace Graeme Fuller VK3NXX, who resigned in August due to pressures of private affairs. Charlie

Robinson VK3ACR has been appointed AMSAT AUSTRALIA CO-ORDINATOR. Bob Arnold VK3ZBB continues as Publicity Officer on amateur satellite matters.

### WIA YEAR BOOK

In September the Publications Committee discussed the possibilities of publishing a WIA Year Book annually for sale to members late each year. The Executive supported this in principle and work on it has commenced. The 1982 edition is proposed to be entitled "WIA 1982 YEAR BOOK FEATURING VHF AND NEW SOUTH WALES". The 1983 edition might feature Victoria and antennas, and so on to cover each Division over a seven year period, as well as to include different subject material culled from the pages of AR. This, to some extent, replaces the ideas last year of publishing WIA books on particular subjects, such as VHF.

Whilst the contents of the Year Book have not been completely finalised at the time of writing, it is envisaged that it should be a book which every member ought to have available on its bookshelf for ready reference purposes. Suitable subjects for inclusion would be a diary of events for 1982, year by year historical highlights, lists of past events, past winners of trophies, etc., the more permanent listings presently included in the 1981/82 Call Book, such as band plans and the like, Divisional and Federal Co-ordinators and much more, including the best of VHF from AR taking up to a quarter or more of the book. Every effort will be made to keep the price right and, incidentally, to restrict the print run to a marketable quantity.

### PHONE PATCH

Here is the text from a letter dated 16th September received by the Federal President from Jim Linton VK3PC:—

"I am writing to let you know that authorised phone patch experiments were this month conducted using station VK3PC.

"The tests were authorised by DOC and Telecom.

"Their aim was to demonstrate to Telecom the envisaged operation of amateur radio phone patch.

"The tests included Third Party Traffic to and from VK9ZG Willis Island and the patching on air of Telecom's acting manager Telephone Regulatory, Matt Moore.

"He spoke via patch to Gray Taylor VK3VGT.

"Mr. Moore was pleased with the quality of transmission — the QSO lasted four minutes."

"All tests were on 15m using SSB."

#### 1981-82 CALL BOOK

A final reminder that stocks of the Call Book are running out fast at the time of writing. Better not be too late in ordering your copy and any other books, badges, etc.

#### STOP PRESS

In letter 53/2/6, 51/1/55 of 5th October the DOC has agreed that certain paragraphs in the Handbook will be considered to be non-examinable for future Section "K" (Regulations) examinations.

The non-examinable list is:—

RECIPROCAL LICENSING 2.4, 2.5.

GENERAL 3.1, 3.2.

SPECIAL NOVICE EXAMINATIONS 3.3.

QUALIFICATIONS AND SYLLABUS 3.4.

PASS CONDITIONS 3.5, 3.6, 3.7, 3.8, 8.9, 3.10, 3.11.

CONDITIONS TO BE FULFILLED BY SUCCESSFUL CANDIDATES 3.12.

REPLACEMENT OF CERTIFICATE 3.15, 3.16.

EXEMPTIONS 3.17, 3.18, 3.19.

TEACHING INSTITUTIONS 3.20.

FORM AND METHOD OF APPLICATION 4.5, 4.11, 4.13, 4.14.

TRANSMITTING EQUIPMENT 5.11, 5.12.

USE OF STATIONS IN THE AMATEUR SERVICE 6.3.

MOBILE OPERATION 6.20, 6.21.

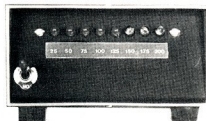
EMERGENCY AMATEUR NETWORKS 6.28, 6.29, 6.30, 6.31, 6.32, 6.33.

RECORDING AND REPLAYING TRANSMISSIONS 6.55.

RELAYING OF TRANSMISSIONS 6.56.

RADIO TELEGRAPHY 8.3, 8.4, 8.5.

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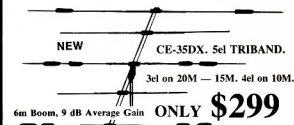
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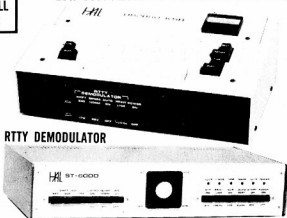
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## GO RTTY WITH **HAL** THE LEADER!!

**WRITE FOR FULL  
HAL CATALOG**

**AUTOMATIC  
SEND-RECEIVE  
TERMINAL**

**LOW COST KEYBOARD SEND-RECEIVE TERMINAL**



**RTTY DEMODULATOR**

# An Aluminium Winch-up Tower

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PO Box 22, Woodend 3442

## WARNING:

If you are not prepared to drill close to 600 holes set out mostly to an accuracy of  $\pm 0.5$  mm, and to cut 147 accurately measured braces, do not read on.

Not being as young as I used to be, and unwilling to rely on outside help to raise my HF and VHF antennas, I decided to purchase a wind-up, tilt-over tower. One telephone call later I decided to design and build my own! The finished tower carries a Mosley TA33Jr and a 2m ZL Special on a 1.8m timber extension.

Since I have no welding facilities nor access to a galvanising plant I decided to use riveted aluminium sections. Due to my lifelong association with the aluminium industry I was confident that I could avoid corrosion trouble with this material. Despite the relatively high price of aluminium the cost of the completed tower was less than half that of a commercial galvanised steel tower.

My basic requirements were these:—

1. Height 11 to 12m.
2. Suitable for antenna maintenance from ground level.
3. Easy erection without outside help.

My previous telescopic mast had been fitted with a hinge at ground level and was pulled up with a boat winch attached to the garage. The existing base, consisting of a 2½ in. galvanised pipe sticking 200 mm out of a small concrete block, was to be used to hinge the bottom of the future tower. It is recommended, however, to increase the width of the hinge fitting, as shown by dotted lines on Sh. 3; this will increase sideways stability during erection. I have to use temporary stay wires at right-angles to the pull lines to prevent possible side sway when lowering the bottom section.

The material list sounds pretty formidable. However, the aluminium sections are readily available from Comalco or Alcan supply centres; most other items are standard hardware. The stainless steel cable and thimbles came from a marine outfitter and the winch from a manufacturer. The mild steel fittings were welded for me at a small local workshop and were drilled in my garage.

## MATERIAL LIST

1. 8 lengths of 25 x 25 x 3 mm Al. angle, 6m long.
2. 15 lengths of 25 x 3 mm Al. strip, 4m long.
3. 60 3/16 in. x ½ in. galvanised roof bolts and nuts.
4. 200 3/16 dia. x ¾ in. Al. pop (blind) rivets, typically Sydney Cooke AS66D.

5. 2 3/16 in. or 5 mm drills — you will break or wear out one.
6. 1 ¼ in. x ¾ in. galvanised bolt and nut, to attach pulley.
7. 1 ¾ in. galvanised bolt and two nuts, length to suit hinge arrangement.
8. 1 ¼ in. galvanised eye bolt with two nuts and spring washer.
9. Small pulley, see sketch.
10. Boat winch.
11. 11m of 2 mm dia. extra flexible stainless steel cable, with s.s. thimble and clamps to suit.
12. Guy wire, insulators, thimbles and clamps, turnbuckles.
13. Mild steel items 3, 4, 5 and 6.
14. One can of chromium or galvanising spray paint.

## CONSTRUCTION

It is strongly recommended that construction be carried out in the steps set out below. Believe me, they are based on bitter experience.

1. Mark out all angles. Use a long steel tape fixed to one end. Do not measure from one mark to the other. Mark within 0.5 mm tolerance, centre punch and drill. Note that the distance of the holes from the edge of the angle is very critical. Before tackling the upper section angles cut 200 mm off each of them, leaving 5.8m. The 4 pieces are used to make up item 12.
2. Cut all braces. Length of lower braces is not very critical, but of upper braces is, since they fit inside the angles. If you are not accurate you may have some filing to do during assembly. Mark all holes within 0.5mm tolerance, centre punch and drill.
3. Assemble braces on the outside of the bottom section. Make up two ladders, stand them on edge and complete the square tower assembly. Rivetting to be done from the inside — this is essential. It is useful to loosely insert 3 or 4 rivets ahead of the one being applied.
4. Repeat the procedure for the upper section, but assemble braces on the inside of the angles. Rivetting must be done from the outside. This will allow the rivet heads to clear each other when sliding. Please note that the holes on each angle side are offset to allow the braces to clear each other. Be careful, when drilling, to have the offset on the correct side — see bottom of Sh. 2.
5. Each lattice, before assembling into a tower, must be checked for absolute straightness. After assembly, the tower must also be checked. If there is a bend, or a deviation from the 180 and

200 mm widths, drill out the nearest two or three rivets, allow the frame to straighten, re-drill through braces and angles, and rivet again.

6. Drill all mild steel items. Clamp them in their exact position on the respective tower sections and use them as template to drill through the Al angles.
7. Paint the mild steel items with several coats of spray paint or, better, have them galvanised.
8. Assemble steel fittings to tower sections. Note that roof bolt heads must be outside on items 3, 5 and 6, but inside on item 4, to ensure sliding.
9. Attach pulley and eye bolt.

You are now ready to proceed to the:—

## ERECTION

1. Slide the top section (2) into bottom section (1). Make sure they do slide, although with some friction due to the horizontal position. If they stick, proceed as per Construction 5.
2. Attach bottom hinge plate (3) to the base by means of the ¾ in. bolt. Push up the far end — weight just over 20 kg — and rest it on a 1.8m step-ladder or simple shear legs.
3. Attach the rotator, pull in and connect its control cable and test; set to desired position.
4. Attach antenna(s). Connect feeder cable(s) and test for continuity. If the reflector is nearest the ground the SWR should be close to correct.
5. Cut guy wires to calculated length, insert insulators where appropriate and attach with galvanised thimbles to lower and upper top hats, (4) and (6). **Note:** I use two of the upper guy wires, with insulators at the top and 10m down, as inverted V for 7 MHz with excellent results, fed with 75 ohm coax at the top.
6. Make sure that one guy wire set, attached to the centre guy wire hole, points directly to the spot where the pull-up winch will be attached; otherwise you will cause sideways pull and possible disaster.
7. Attach the s.s. winch to the eyebolt by thimble and cable clamps, feed it through the tower and over the pulley and secure it near the hinge plate (7).
8. Connect a temporary extension to the lower of the two guy wires facing the pull-up position of the winch (on a suitable point of the house or garage) and attach to the winch.
9. Attach the other two lower guy wires to their ground attachment points. If your hinge base is narrow use temporary stay wires to prevent the tower from swinging before the lower guy wires are sufficiently extended.

10. When the tower is vertical and therefore balanced, detach the guy wire from the winch. Without releasing the pull on the tower attach the guy wire to its ground point.
11. Adjust all guy wires of the lower section to keep it exactly vertical, and make off permanently.
12. Test rotator and antenna(s).
13. Remove winch from garage (or house) and bolt it to the winch plate (7). Attach the s.s. cable to the winch.
14. Although the assembly is very strong I recommend that you pick a still day to winch the upper section to its full height. Leave about 600 mm overlap. During winching make carefully sure that all cables slide up without catching. I fastened the cable bundle to the inside of the upper section braces with insulating tape; during winch-up I taped the cables together every 1 m as they fed into the bottom section.
15. Permanently terminate all upper guy wires, making sure that the upper section is exactly vertical. Do not make them too tight because this imposes an unnecessary downward pull on the winch cable. The safe load for a 2 mm flexible cable is about 300 kg.

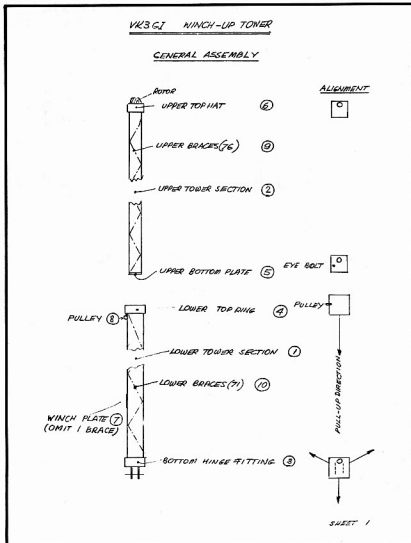
Now operate to your heart's content.

#### POSTSCRIPT

Further notes from author:—

1. It is recommended as good practice to earth the tower by attaching a piece of flexible cable, connected to a ground stake.
2. The stop, item 11, sheet 2, is made up from left-over 25 x 3 mm Al. strip.
3. If 4, instead of 3, guy wires are used the risk of side sway during pulling up or lowering of the tower is eliminated. This modification requires that the guy attachment holes (10 mm) on items 4 and 6 should be drilled centrally on all four sides instead of the 3 holes shown, 2 of which are offset from centre.

If there are any queries please ring VK3GI on (054) 27 2576.

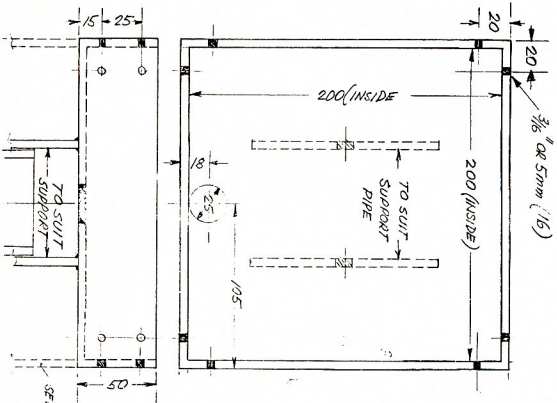


SHEETS 2-7, showing full construction details, follow ♦



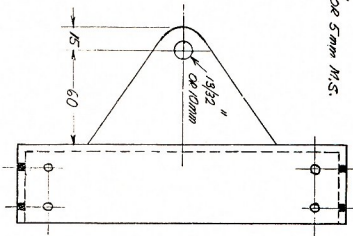
From "The Propagator" April '81





ITEM ③ BOTTOM HINGE FITTING

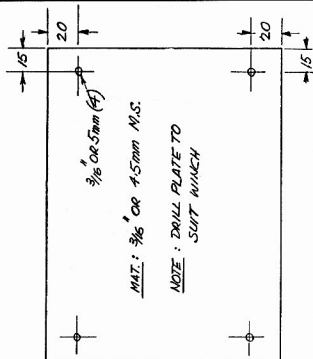
MAT: 3/16" OR 5mm M.S.





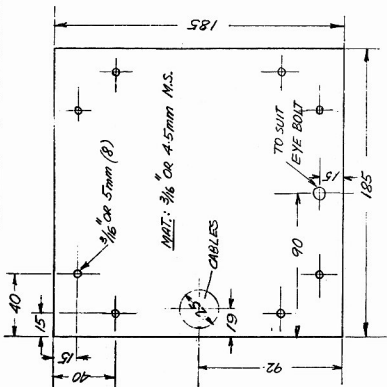


ITEM ② WINCH PLATE



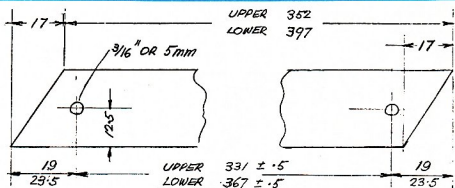
HALF SIZE

ITEM ⑤ UPPER BOTTOM PLATE



CHAMFER  
BOTTOM  
ALL ROUND

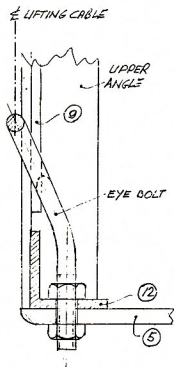
SHEET 5



## BRACES ⑨ & ⑩

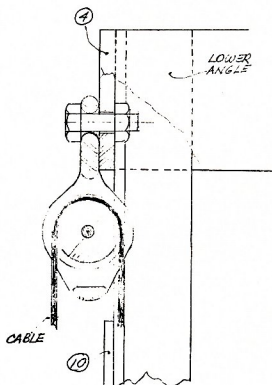
FULL SIZE

NOTE : LOWER BRACES ⑩ ASSEMBLED OUTSIDE ANGLE  
UPPER BRACES ⑨ ASSEMBLED INSIDE ANGLE



## LIFTING EYE ASSEMBLY

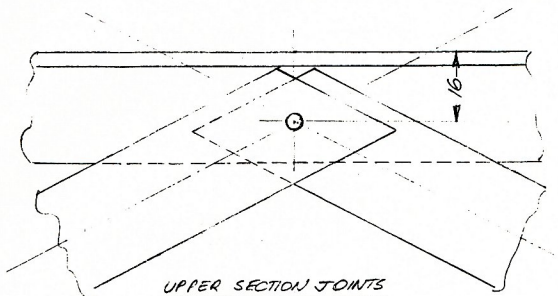
FULL SIZE



## PULLEY ASSEMBLY

FULL SIZE

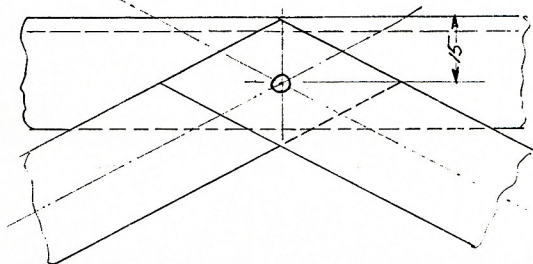
SHEET 6



RIVET FROM OUTSIDE

## LOWER SECTION JOINTS

RIVET FROM INSIDE



# What should you know about Burns?

Man is a fragile creature, intolerant of even quite moderate heat. In general, temperatures about 65°C (150°F) are tolerated for only limited periods, the length of time depending on the dryness of the air, the amount of protective clothing worn, and the exertion required. Above 95°C (203°F), the tolerance time drops sharply so that while 120°C (250°F) can be tolerated for 15 minutes, 145°C (294°F) becomes intolerable in 5 minutes, and at 175°C (348°F) irreversible injury occurs to the skin in less than one minute. These tolerances compare unfavourably with the heat generated by a fire, which may reach temperatures of 150°C ten feet ahead of the blaze and over 543°C (1,000°F) above the fire.

## HOW EXTENSIVE IS THE BURN PROBLEM?

The National Commission on Fire Prevention and Control, in its Report to the President and the Congress, said that 300,000 Americans are seriously burned each and every year. "Seriously burned" in this Report was considered to be a burn of 15 per cent of the body surface or more, although from the point of view of life survival, physicians in this country consider a 15 per cent burn life-threatening only in toddlers and in the ill and elderly, unless the wounds become infected.

Doctors refer to the severity of burns as first, second and third degree. The most severe are third-degree burns and the least severe first-degree. This is exactly the opposite of legal terminology, in which first-degree murder is the most serious.

## BURN DEPTH

In a first-degree burn, the skin is reddened but there is no blistering. Most of us have had first-degree sunburns at one time or another, and some of us have had sunburns that blistered.

A second-degree burn includes both reddening and blistering, but does not destroy the full thickness of the skin. With the possible exception of the soles of our feet, we don't think about our skin as being thick, since it is so easy to cut through with a razor, but the thickness of the skin is important. If only the upper layers of the skin cells are destroyed, new skin can grow from the uninjured cells below. An analogy can be made with a lawn. If you cut the grass, it will grow again from the roots. If you destroy cells in the upper layers of the skin (whether by burning or by skinning your knee), the wound will repair itself from the cells that are not damaged. If, however, you bring a bulldozer into your yard and plow up all the grass by the roots, the lawn will not grow until it is reseeded. Similarly, if you destroy all the skin cells by heat, the skin will not regrow but must be replaced by a skin graft.

The severity of a burn is determined by many factors, some of which are the intensity of the heat (°C), the length of exposure, the size of the body area burned, the thickness of the skin, the age and health of the victim, and the speed of subsequent cooling. Two burns that look identical on the surface may have different outcomes, depending on whether or not the full thickness of the skin has been destroyed. If you have ever cooked a chicken, you are aware that it takes time for heat to penetrate. Skin that has been exposed briefly to high-intensity heat may look like a full-thickness burn, with the surface charred yellow-brown or whitish, but deep cells may still be intact. A longer exposure to more moderate heat may result in a wound that cannot heal without grafting because the heat has had time to penetrate, and all the underlying cells were destroyed.

## IF IT HURTS, REJOICE

If you burn yourself in your kitchen or while fighting a fire and the burn hurts, it is a good sign. A full-thickness (third-degree) burn destroys the nerve endings and does not hurt. If properly cared for, a wound that hurts will probably heal without the necessity for grafting.

## CONVERSION OF SECOND-DEGREE TO THIRD-DEGREE BURNS

Even with good care, a deep second-degree burn can become infected. Pathogenic bacteria (germs that can cause infection) are everywhere — on the victim's skin, in the air, your mouth, on the page you are reading, on floors, tables, and especially on your hands. If a burn becomes contaminated with bacteria, there is a good chance that the bacteria will invade the burned tissue. Intact skin resists bacterial invasion, an important service of which most of us are unaware. Without skin to protect us, we are all vulnerable to infection. When a burn becomes infected by bacterial invasion, the last remaining islands of cells from which skin can regrow can be destroyed. Pus is little more than dead bacteria, dead white blood cells (which come to do battle with the bacteria), and cell debris. A neglected burn is much more likely to become infected than one that is cared for.

## KEEP YOUR FINGERS OFF THE BURN WOUNDS

Your fingers, which go to dirty places, are loaded with bacteria and so is your mouth. The heat that causes a bad burn may kill many of the bacteria on a burn wound, but contact with human hands can re-establish them there. Bacteria may spread through the tissues, killing cells, creeping through body to the bloodstream, causing fever, debilitation, and death. Protect burn wounds from germs while in transit by

covering them with the cleanest material available. If sterile dressings are not at hand, a clean sheet or pillowcase will do.

Every time you speak, you spray the people around you with bacteria. The germs are so small that we can't see them, but they are there, and many of them can wreak havoc in an open wound. If you have a cold or sore throat, you are a menace to the burned patient. Let someone else take care of him, if anyone else is available. In any case, cover the wounds early.

## WHAT ABOUT COLD WATER?

You can actually decrease the severity of a burn if you cool the skin quickly. If you wait five minutes and put cold water on broken blisters, you may do more harm than good, introducing bacteria into the wound with the water. Don't waste time trying to get ice out of ice-cube trays. If you burn your finger in the kitchen, put your hand under the stream of water from the cold-water tap. If blisters are already broken, forget the water; put a sterile dressing or the cleanest material available on the burn, and seek medical care.

## HANDS ARE LIKE MONEY IN THE BANK

Your hands feed you, dress you, save you from falling, help you over rough terrain, carry your burdens, and serve you in a thousand ways. Be kind to them. Medical attention is wise for all but the smallest burns of the hands. Even little burns of the hands should be covered with sterile dressings, since hands can readily become contaminated with bacteria.

## WHAT ABOUT SURVIVAL?

The size of the body area burned is important in determining the victim's chances of survival. In general, for adults, if you add the patient's age to the extent of his burn, the patient will have better than a 50:50 chance of surviving if the total is under 100.

Like the elderly, infants and toddlers are more vulnerable to fire than those in the middle years. They have more difficulty escaping from flames and are less aware of what they should do, and thus tend to be more severely burned than older children. Once in school, children learn quickly that they should drop and roll if their clothes catch fire, but this instruction comes much too late. It should be given to two-year-olds. It is a mistake to sell the little ones short and assume that they are too young to learn or understand, for the best burn treatment is prevention.

(Article by Dr. Anne W. Phillips, Executive-Director of the National Smoke, Fire and Burn Institute, Inc., which appeared in the FIRE JOURNAL of the National Fire Protection Association, Boston, Mass., U.S.A.)

# CW Procedures and Techniques

By Bert G3XSN  
From RNARS Journal "Jimmy", April 1981

Morse Code is supposed to be the transmission of intelligence by means of Morse Code. Whilst I do not profess to be an expert, I guess that poor old Samuel Morse must have turned over in his grave many times listening to the Amateur Bands.

As far as I know, CW is still based on a 3:1 ratio at about 15 w.p.m.

An operator with a slow steady clean cut method of sending has a big advantage over the poor operator. Good sending is partly a matter of practice, but patience and judgment are just as important qualities of an operator as a "good fist". Operating knowledge of Standard Procedures and some "NET" know-how are necessary.

The best operators, both using "phone" and "CW", observe certain operating procedures which are regarded as Standard Practice.

## (1) CALLS

VK2NLE, VK2NLE, VK2NLE, de G3XSN, G3XSN, G3XSN, AR... a long call is unnecessary, and only causes frustration.

**CQ**  
The general enquiry call. The length of repeated calls is carefully limited in intelligent amateur operating. CQ is not used when testing or when the operator is not expecting or looking for an answer.

Never send CQ "blind". Listen to the transmitting frequency first. If nothing is heard, then ask QRL (is this frequency in use, please?). It does no harm to enquire a couple of times before putting out a call.

## THE DIRECTIONAL CQ

To avoid useless answers and lessen QRM, every CQ call should be made informative, when possible. Repeat, do not answer such calls not applicable to you. E.g., CQVK, CQVK, CQVK de G3XSN, G3XSN, G3XSN.

Amateurs who do not raise stations easily may find that their sending is poor, their calls badly timed, or their judgment in error.

When conditions are right to bring in signals from the desired locality, you can call them with short calls at about the same frequency, with breaks to listen. This will raise stations with minimum time and trouble.

## (2) ANSWERING A CALL

After contact is established, decrease the use of the call signals of both stations to once or twice.

When a station receives a call but does not receive the call-letters of the station, calling QRZ? may be used. It means "By whom am I being called?".

QRZ should not be used in place of CQ.

## (3) ENDING SIGNALS AND SIGN-OFF

The ending signals AR, K, KN, SK and CL are often confused.

AR means ends of transmission. It is recommended after a call to a specific station before contact has been made. E.g., ZL1AXM (x3) de G3XSN (x3) AR.

K means to go ahead. (Any station.) Recommended after CQ and at the end of each transmission during QSO, when there is no objection to others breaking in. E.g., CQ, CQ, CQ, de G3XSN, K, or VK4XY de G3XSN K.

KN — Go ahead (specific station), all others keep out. Recommended at the end of each transmission during a QSO, or after a call, when calls from other stations are not desired and will not be answered. E.g., VK6PG de G3XSN KN.

SK means end of QSO. recommended before signing last transmission at end of QSO. E.g., VK2DDW de G3XSN SK.

CL means "I am closing down my station". Recommended when a station is going off the air to indicate it will not listen for further calls. E.g., VK4CD de G3XSN SK CL, or SK VK4CD de G3XSN CL.

R means transmission received as sent. Use "R" only when all is received correctly.

## REPEATS

When most of the transmission is lost, a call should be followed by correct abbreviations to ask for repeats. When a few words on the end of a transmission are lost, the last word received correctly is given, then send "AA?", meaning "all after?". This invites the station to repeat again all after the last word correctly received.

When a few words at the beginning of a transmission are lost, then send "AB?" ("all before?") and send the word which was received correctly.

The quickest way to ask for a fill in the middle of a transmission is to send the last word received correctly, a question mark, then the next word received correctly. Another way is to send "7BN" (word) and (word). Do not send words twice (OSZ) unless it is requested. Do not send QRM or QRN when you mean QRZ.

## GOOD PRACTICES

- (1) The letter "R" is often used in place of a decimal point—e.g., 3R5 MHz, or the colon in time designation—e.g., 2R30 p.m.
- (2) A long dash is sometimes sent for Zero.
- (3) For best results, send at a medium speed.

- (4) Send evenly with proper spacing.
- (5) No excuses for "poor or garbled copy".
- (6) Good operators do not anticipate.
- (7) "Swing" in a list is not the mark of a good operator.
- (8) Unusual words are sent twice.

## ON GOOD SENDING

Think about your sending a little. Are you satisfied with it? You should not be, ever. Nobody's sending is perfect, and therefore every operator should continually strive for improvement. Do you ever run letters together, like Q for MA, or P for AN—especially when you are in a hurry? Practically everyone does at one time or the other.

Tape record your QSOs and play them back to yourself. Can you read what you send? If possible use an inked tape recorder. This will really show up your faults.

Not so long ago I was trying to copy an Amateur's call sign. He was sending "V12ZZ"; what he meant to send was "12ZZV". This is very bad practice. When conditions are poor, don't continue repeating irrelevancies instead of "Guts". Do not send Name, Name, Name, QQ times—send Bill, Bill, Bill, or Liverpool, Liverpool, instead of QTH 1000 times. ■

## DIAL-A-PROP

A telephone service, telephone (02) 269 8614, provided by the Ionospheric Prediction Service, detailing the state of the sun, the ionosphere and the earth's magnetic field, began on 1 October, 1979. The daily report includes the following details:

1. The current status of IPS disturbance warnings. If one is current, its text will be given. The warnings include details of solar activity, sudden ionospheric disturbances (daylight fade-outs), and current and expected geomagnetic disturbances.
2. The current state of solar activity (flares, active sunspot regions), and the expected course of solar activity over the next three days. Flares are described on the M (1-9) and X (1-8) scales which refer to their medium or strong X-ray effect.
3. A report on ionospheric conditions in the Sydney area and a forecast of general radio propagation quality for the next three days (good, fair, poor).
4. The current state of the geomagnetic field and its expected behaviour over the next 24 hours.
5. The Ottawa 10.7 cm solar radio flux for the previous 24 hours and the predicted values for the next three days.
6. The observed magnetic A-index (Fredericksburg) for the period two days previously and the predicted values for the following three days.

The duration of the message is between 45 and 90 seconds and the contents of the message is updated daily at about 1000 AEST (0600 UT), with more frequent amendments at times of high solar, geomagnetic, or ionospheric activity.

This service is titled the IPS Daily Solar Geophysical Report and the telephone number is (02) 269 8614. ■

# A New Repeater Site — Part 2

Jim Weaver VK8YL  
Pete, Secretary, WA Repeater Group

The events leading up to concrete pouring day — "G" Day — were all explained in the first part of this saga. Now it is "O" Day comes!

At 7:15 p.m. on Friday night we were informed that the intended cement truck had a damaged gearbox, the result for the weigh batching machine was needed urgently in the country, and just to add to our worries the front-end loader was required by the quarry to replace another machine due for service. Fortunately a substitute cement truck was arranged and Peter VK8PO burnt midnight oil constructing another roadstead for us to use.

Undaunted we proceeded. Over 20 of us arrived on site at 8:00 a.m. Saturday, the 6th of June, compacted the sand and prepared the framework for the shack floor and roof, while all the time the rain clouds darkened above. Simultaneously at 1:00 a.m. the concrete truck, the front-end loader and the rain arrived. For four hours ingredients were weighed, mixed, poured, vibrated and shouted by the very hard working team who thanked the truck driver at 5:00 p.m. and retired very wet, cold and soggy for lunch in the quarry shop. Due to many gallons of water lying on top of the concrete it was impossible to travel it over. It was covered with donated plastic and the clearing up process then began. Meanwhile my OM, Bob (not an amateur), who had driven the loader all day, continued to ferry excess blue metal and sand up to the hill — filling in pot-holes on "Tic Highway" and knocking out "bump-crushing" rocks until the track became too slippery and darkness fell. Around 8:00 p.m. many very tired but elated people wended their weary way home; we had achieved step one of our goal.

People are wonderful . . . from several sources we acquired around 2,000 bricks, 1,400 new ones, with the balance second-hand, which were transported to the site in borrowed trailers and cleared by teams of amateurs, wives and harmonicas, who scoured the little gully with their picks and shovels. Stan Robson, a bricklayer friend of one of our members, volunteered to build the shack, with our group doing the labouring. Drums and timbales were lent by amateurs, a door frame donated and wall bricks purchased. We mixed the cement by hand for Stan, who completed the shack in four working days, and christened it "Ticky". Please note that we call the site "Tic Hill". We chose TIC in preference to TIGX for originality. Much trauma when the day came to lift the roof on top of Ticky, but with the aid of the crane — borrowed of course — this was achieved without any hitch.

Whilst Stan was bricklaying other members were hard at work removing the corrugated iron roofing which left a beautiful



crinkle cut finish on the concrete. One of the most bush-breaking jobs was that of retilling the rocks and gravel around the tower bases and leveling off the site. Each week work continued in an endeavour to return the area back to a natural contour to allow nature to take her course in time to come.

Tim VK8ZUL was in charge of the wind generator and tower, which in its time grew above the trees to 40 feet high. He spent many many hours of his own time, not only on the wind generator and the

attractively finished satellite panel housing the controls, fuses, etc., but he prepared for the coas and cables, the bees and many other things — thank you Tim! Meanwhile other members worked on the 100 ft. antenna tower. We had to pick our days carefully as during winter the rain and winds were extremely strong, especially for the boys working around the 80 ft. level of the tower. One calm Sunday afternoon we ran out of nuts and bolts. We were very thankful when we received a relay from the firm responsible for earlier donations to say they would meet us at their business premises and give us sufficient to complete the tower.

A tradition was set — hot potatoes at the end of each working day, cooked in foil in the coals of the fire originally intended to burn out a large tree stump. Long after the stump had gone the fire was in to provide warmth and a drying agent for the wet and weary. Later we enjoyed making a small barbecue from the left-over site materials, and sausages were added to the menu.

We are greatly indebted to the brothers Kevin VK8JOW and Peter VK8PO, with son Robert, for their expertise throughout the project from beginning to end, especially with the main tower. Robson with many firms and hours of hard work. Peter made a pin pole which allowed us to lift the very heavy tower top in place at the 100 ft. level, with the 22 ft. 6 db gain co-linear antenna above this.

Our president, Trevor VK8MS, had the unenviable task of designing and con-



Site clearing.

striking insuperable items for the site. His knowledge and organisation of materials, together with his extensive supply of tools, never failed to amaze us. The project would have never estimated without you, Trevor. Thank you from all of us.

Much barbed wire was run around the towers and entry points to increase security; later we hope to erect a fence. Lights were fitted inside Ticky, which has been painted with several coats of a white water-proofing solution on the entire inside and roof top; no more fest when it was pouring down with rain during this process, the solution could only be described as looking like a sloppy flour and water dough — it clung to our brushes like glue!

With VK6BU, Iain VK6ZB and Barry VK6SAZ continued working on the site during the RD contest, taking time off to contact the other members participating via the new repeater antenna, wind generator and six only 2V 800 AH batteries — well done boys! They discovered that power line noise was present. Suspecting the 22 kV 3-phase lines just to the north of the repeater to be the culprit, we set out the following Sunday in a 4-wheel drive equipped with flashing beacons and snop loops to track down the offending pole. Murphy showed his presence as usual: no power line noise could be heard that day, though four very audibly noisy insulators were located after a spine crutching two hours almost blinding our own trails in the rocky terrain. The authorities have been notified and are going to replace the insulators.

George, the operator of the Can D900 loader (called "Betsy"), volunteered his services with permission of the owners to landscape the terrain around our site —



"What frequency rocks did you want?"



Iain VK6ZB and the wind generator.



"O" Day.

we would still be shovelling next Christmas without his generous help. Fifty tons of gravel, road base and clay, y'all did too much clay thank heavens, were carted in the huge bucket and spread around the site, with the members shovelling and raking it flat. It looks lovely, thank you, George, for all your work and especially for our "pet rock"; all 21 tons of it brought from the quarry to the site. Taking of pet rocks, interesting coloured strata was found whilst jackhammering; chips of these were sold to boost our very depleted funds. Spring is now upon us, the wild flowers are in bloom around the area, and

we hope it will not be long before they return to where we disturbed the land.

The repeater has been installed and we are in readiness for the grand opening in mid-October. Over 300 days (1 year without holidays) working 10 hours each day would have been needed for one man to complete the project. There were actually 25 full days (8,750 hours) worked by the following amateurs, wives, harmonics and friends: VK6AD, VK6AUS, VK6AWW, VK6CU, Gurn, VK6EW, VK6FC, VK6HA, VK6HL, VK6KB, VK6QD, VK6KJL, VK6KZ, VK6KMS, VK6OD, VK6OW, VK6PD, Robert, VK6PQ, VK6RW, Stan, Robert, VK6UD,



"We did it" President Trevor VK2MB.

VK2FU VK2PL, Bob, VK2YS, VK2ZB, VK2ZB, VK2ZC, VK2ZF, VK2DGA, VK2ZHV, VK2ZB, VK2ZAR, VK2ZRV, VK2LT, VK2ZMB, VK2ZNO, VK2ZPB, VK2ZHR, Peter, VK2ZSE, VK2ZST, Martin and friend Mark from Scalor.

We would like to thank the following, together with many of our members listed above, for their donations:—

Pioneer Quarries, especially George and Phil, Corriban Cement, Swan Portland Cement, Cement and Concrete Association, Delta Concrete, Scalor, A & M Wholesalers, Ian and Ray Ikon, VK2ABR, VK2BV, VK2D, VK2DL, VK2TO, VK2UN, VK2VE, VK2UR, with apologies to anyone we have missed. To all those who purchased "Pat Roper", to members of the WA Register Group and all amateurs and families, we say thank you for your support.

In conclusion, may I say that it has given me great pleasure to be the co-ordinator of this wonderful project — thank you. ■



"That" gets a hat.



Circle out concrete.

## QSP

### TOWNVILLE

Townsville, the second largest city in Queensland, has a population of 108 licensed amateur radio operators. The Club Station VK2WTF is on air every Sunday at 04.30 GMT, 3.00, and 10.30 GMT at 10.00, 11.00, 12.00, 13.00, 14.00, 15.00, 16.00, 17.00, 18.00, 19.00, 20.00, 21.00, 22.00, 23.00, 24.00, 25.00, 26.00, 27.00, 28.00, 29.00, 30.00, 31.00, 32.00, 33.00, 34.00, 35.00, 36.00, 37.00, 38.00, 39.00, 40.00, 41.00, 42.00, 43.00, 44.00, 45.00, 46.00, 47.00, 48.00, 49.00, 50.00, 51.00, 52.00, 53.00, 54.00, 55.00, 56.00, 57.00, 58.00, 59.00, 60.00, 61.00, 62.00, 63.00, 64.00, 65.00, 66.00, 67.00, 68.00, 69.00, 70.00, 71.00, 72.00, 73.00, 74.00, 75.00, 76.00, 77.00, 78.00, 79.00, 80.00, 81.00, 82.00, 83.00, 84.00, 85.00, 86.00, 87.00, 88.00, 89.00, 90.00, 91.00, 92.00, 93.00, 94.00, 95.00, 96.00, 97.00, 98.00, 99.00, 100.00, 101.00, 102.00, 103.00, 104.00, 105.00, 106.00, 107.00, 108.00, 109.00, 110.00, 111.00, 112.00, 113.00, 114.00, 115.00, 116.00, 117.00, 118.00, 119.00, 120.00, 121.00, 122.00, 123.00, 124.00, 125.00, 126.00, 127.00, 128.00, 129.00, 130.00, 131.00, 132.00, 133.00, 134.00, 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260.00, 261.00, 262.00, 263.00, 264.00, 265.00, 266.00, 267.00, 268.00, 269.00, 270.00, 271.00, 272.00, 273.00, 274.00, 275.00, 276.00, 277.00, 278.00, 279.00, 280.00, 281.00, 282.00, 283.00, 284.00, 285.00, 286.00, 287.00, 288.00, 289.00, 290.00, 291.00, 292.00, 293.00, 294.00, 295.00, 296.00, 297.00, 298.00, 299.00, 300.00, 301.00, 302.00, 303.00, 304.00, 305.00, 306.00, 307.00, 308.00, 309.00, 310.00, 311.00, 312.00, 313.00, 314.00, 315.00, 316.00, 317.00, 318.00, 319.00, 320.00, 321.00, 322.00, 323.00, 324.00, 325.00, 326.00, 327.00, 328.00, 329.00, 330.00, 331.00, 332.00, 333.00, 334.00, 335.00, 336.00, 337.00, 338.00, 339.00, 340.00, 341.00, 342.00, 343.00, 344.00, 345.00, 346.00, 347.00, 348.00, 349.00, 350.00, 351.00, 352.00, 353.00, 354.00, 355.00, 356.00, 357.00, 358.00, 359.00, 360.00, 361.00, 362.00, 363.00, 364.00, 365.00, 366.00, 367.00, 368.00, 369.00, 370.00, 371.00, 372.00, 373.00, 374.00, 375.00, 376.00, 377.00, 378.00, 379.00, 380.00, 381.00, 382.00, 383.00, 384.00, 385.00, 386.00, 387.00, 388.00, 389.00, 390.00, 391.00, 392.00, 393.00, 394.00, 395.00, 396.00, 397.00, 398.00, 399.00, 400.00, 401.00, 402.00, 403.00, 404.00, 405.00, 406.00, 407.00, 408.00, 409.00, 410.00, 411.00, 412.00, 413.00, 414.00, 415.00, 416.00, 417.00, 418.00, 419.00, 420.00, 421.00, 422.00, 423.00, 424.00, 425.00, 426.00, 427.00, 428.00, 429.00, 430.00, 431.00, 432.00, 433.00, 434.00, 435.00, 436.00, 437.00, 438.00, 439.00, 440.00, 441.00, 442.00, 443.00, 444.00, 445.00, 446.00, 447.00, 448.00, 449.00, 450.00, 451.00, 452.00, 453.00, 454.00, 455.00, 456.00, 457.00, 458.00, 459.00, 460.00, 461.00, 462.00, 463.00, 464.00, 465.00, 466.00, 467.00, 468.00, 469.00, 470.00, 471.00, 472.00, 473.00, 474.00, 475.00, 476.00, 477.00, 478.00, 479.00, 480.00, 481.00, 482.00, 483.00, 484.00, 485.00, 486.00, 487.00, 488.00, 489.00, 490.00, 491.00, 492.00, 493.00, 494.00, 495.00, 496.00, 497.00, 498.00, 499.00, 500.00, 501.00, 502.00, 503.00, 504.00, 505.00, 506.00, 507.00, 508.00, 509.00, 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635.00, 636.00, 637.00, 638.00, 639.00, 640.00, 641.00, 642.00, 643.00, 644.00, 645.00, 646.00, 647.00, 648.00, 649.00, 650.00, 651.00, 652.00, 653.00, 654.00, 655.00, 656.00, 657.00, 658.00, 659.00, 660.00, 661.00, 662.00, 663.00, 664.00, 665.00, 666.00, 667.00, 668.00, 669.00, 670.00, 671.00, 672.00, 673.00, 674.00, 675.00, 676.00, 677.00, 678.00, 679.00, 680.00, 681.00, 682.00, 683.00, 684.00, 685.00, 686.00, 687.00, 688.00, 689.00, 690.00, 691.00, 692.00, 693.00, 694.00, 695.00, 696.00, 697.00, 698.00, 699.00, 700.00, 701.00, 702.00, 703.00, 704.00, 705.00, 706.00, 707.00, 708.00, 709.00, 710.00, 711.00, 712.00, 713.00, 714.00, 715.00, 716.00, 717.00, 718.00, 719.00, 720.00, 721.00, 722.00, 723.00, 724.00, 725.00, 726.00, 727.00, 728.00, 729.00, 730.00, 731.00, 732.00, 733.00, 734.00, 735.00, 736.00, 737.00, 738.00, 739.00, 740.00, 741.00, 742.00, 743.00, 744.00, 745.00, 746.00, 747.00, 748.00, 749.00, 750.00, 751.00, 752.00, 753.00, 754.00, 755.00, 756.00, 757.00, 758.00, 759.00, 760.00, 761.00, 762.00, 763.00, 764.00, 765.00, 766.00, 767.00, 768.00, 769.00, 770.00, 771.00, 772.00, 773.00, 774.00, 775.00, 776.00, 777.00, 778.00, 779.00, 780.00, 781.00, 782.00, 783.00, 784.00, 785.00, 786.00, 787.00, 788.00, 789.00, 790.00, 791.00, 792.00, 793.00, 794.00, 795.00, 796.00, 797.00, 798.00, 799.00, 800.00, 801.00, 802.00, 803.00, 804.00, 805.00, 806.00, 807.00, 808.00, 809.00, 810.00, 811.00, 812.00, 813.00, 814.00, 815.00, 816.00, 817.00, 818.00, 819.00, 820.00, 821.00, 822.00, 823.00, 824.00, 825.00, 826.00, 827.00, 828.00, 829.00, 830.00, 831.00, 832.00, 833.00, 834.00, 835.00, 836.00, 837.00, 838.00, 839.00, 840.00, 841.00, 842.00, 843.00, 844.00, 845.00, 846.00, 847.00, 848.00, 849.00, 850.00, 851.00, 852.00, 853.00, 854.00, 855.00, 856.00, 857.00, 858.00, 859.00, 860.00, 861.00, 862.00, 863.00, 864.00, 865.00, 866.00, 867.00, 868.00, 869.00, 870.00, 871.00, 872.00, 873.00, 874.00, 875.00, 876.00, 877.00, 878.00, 879.00, 880.00, 881.00, 882.00, 883.00, 884.00, 885.00, 886.00, 887.00, 888.00, 889.00, 890.00, 891.00, 892.00, 893.00, 894.00, 895.00, 896.00, 897.00, 898.00, 899.00, 900.00, 901.00, 902.00, 903.00, 904.00, 905.00, 906.00, 907.00, 908.00, 909.00, 910.00, 911.00, 912.00, 913.00, 914.00, 915.00, 916.00, 917.00, 918.00, 919.00, 920.00, 921.00, 922.00, 923.00, 924.00, 925.00, 926.00, 927.00, 928.00, 929.00, 930.00, 931.00, 932.00, 933.00, 934.00, 935.00, 936.00, 937.00, 938.00, 939.00, 940.00, 941.00, 942.00, 943.00, 944.00, 945.00, 946.00, 947.00, 948.00, 949.00, 950.00, 951.00, 952.00, 953.00, 954.00, 955.00, 956.00, 957.00, 958.00, 959.00, 960.00, 961.00, 962.00, 963.00, 964.00, 965.00, 966.00, 967.00, 968.00, 969.00, 970.00, 971.00, 972.00, 973.00, 974.00, 975.00, 976.00, 977.00, 978.00, 979.00, 980.00, 981.00, 982.00, 983.00, 984.00, 985.00, 986.00, 987.00, 988.00, 989.00, 990.00, 991.00, 992.00, 993.00, 994.00, 995.00, 996.00, 997.00, 998.00, 999.00, 1000.00, 1001.00, 1002.00, 1003.00, 1004.00, 1005.00, 1006.00, 1007.00, 1008.00, 1009.00, 1010.00, 1011.00, 1012.00, 1013.00, 1014.00, 1015.00, 1016.00, 1017.00, 1018.00, 1019.00, 1020.00, 1021.00, 1022.00, 1023.00, 1024.00, 1025.00, 1026.00, 1027.00, 1028.00, 1029.00, 1030.00, 1031.00, 1032.00, 1033.00, 1034.00, 1035.00, 1036.00, 1037.00, 1038.00, 1039.00, 1040.00, 1041.00, 1042.00, 1043.00, 1044.00, 1045.00, 1046.00, 1047.00, 1048.00, 1049.00, 1050.00, 1051.00, 1052.00, 1053.00, 1054.00, 1055.00, 1056.00, 1057.00, 1058.00, 1059.00, 1060.00, 1061.00, 1062.00, 1063.00, 1064.00, 1065.00, 1066.00, 1067.00, 1068.00, 1069.00, 1070.00, 1071.00, 1072.00, 1073.00, 1074.00, 1075.00, 1076.00, 1077.00, 1078.00, 1079.00, 1080.00, 1081.00, 1082.00, 1083.00, 1084.00, 1085.00, 1086.00, 1087.00, 1088.00, 1089.00, 1090.00, 1091.00, 1092.00, 1093.00, 1094.00, 1095.00, 1096.00, 1097.00, 1098.00, 1099.00, 1100.00, 1101.00, 1102.00, 1103.00, 1104.00, 1105.00, 1106.00, 1107.00, 1108.00, 1109.00, 1110.00, 1111.00, 1112.00, 1113.00, 1114.00, 1115.00, 1116.00, 1117.00, 1118.00, 1119.00, 1120.00, 1121.00, 1122.00, 1123.00, 1124.00, 1125.00, 1126.00, 1127.00, 1128.00, 1129.00, 1130.00, 1131.00, 1132.00, 1133.00, 1134.00, 1135.00, 1136.00, 1137.00, 1138.00, 1139.00, 1140.00, 1141.00, 1142.00, 1143.00, 1144.00, 1145.00, 1146.00, 1147.00, 1148.00, 1149.00, 1150.00, 1151.00, 1152.00, 1153.00, 1154.00, 1155.00, 1156.00, 1157.00, 1158.00, 1159.00, 1160.00, 1161.00, 1162.00, 1163.00, 1164.00, 1165.00, 1166.00, 1167.00, 1168.00, 1169.00, 1170.00, 1171.00, 1172.00, 1173.00, 1174.00, 1175.00, 1176.00, 1177.00, 1178.00, 1179.00, 1180.00, 1181.00, 1182.00, 1183.00, 1184.00, 1185.00, 1186.00, 1187.00, 1188.00, 1189.00, 1190.00, 1191.00, 1192.00, 1193.00, 1194.00, 1195.00, 1196.00, 1197.00, 1198.00, 1199.00, 1200.00, 1201.00, 1202.00, 1203.00, 1204.00, 1205.00, 1206.00, 1207.00, 1208.00, 1209.00, 1210.00, 1211.00, 1212.00, 1213.00, 1214.00, 1215.00, 1216.00, 1217.00, 1218.00, 1219.00, 1220.00, 1221.00, 1222.00, 1223.00, 1224.00, 1225.00, 1226.00, 1227.00, 1228.00, 1229.00, 1230.00, 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1342.00, 1343.00, 1344.00, 1345.00, 1346.00, 1347.00, 1348.00, 1349.00, 1350.00, 1351.00, 1352.00, 1353.00, 1354.00, 1355.00, 1356.00, 1357.00, 1358.00, 1359.00, 1360.00, 1361.00, 1362.00, 1363.00, 1364.00, 1365.00, 1366.00, 1367.00, 1368.00, 1369.00, 1370.00, 1371.00, 1372.00, 1373.00, 1374.00, 1375.00, 1376.00, 1377.00, 1378.00, 1379.00, 1380.00, 1381.00, 1382.00, 1383.00, 1384.00, 1385.00, 1386.00, 1387.00, 1388.00, 1389.00, 1390.00, 1391.00, 1392.00, 1393.00, 1394.00, 1395.00, 1396.00, 1397.00, 1398.00, 1399.00, 1400.00, 1401.00, 1402.00, 1403.00, 1404.00, 1405.00, 1406.00, 14



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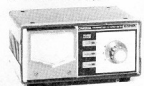
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# A Tale of a Tower

## — Further Information on the VK5JG Design

In the August 1981 issue we published a design for a simple tower and mast entitled "Mounting a Quad Antenna" by John A. Gazard VK5JG. Resulting from comments by the draftsman we added some footnotes based on the information initially supplied. Now, in the light of more data from the author, we see that some of our suggestions introduce more problems than they solve, and others have already been taken into account. So much useful information is contained in the letters from VK5JG that we now publish the correspondence essentially unedited.

The Editor,  
Dear Sir,

I have the following comments to make on the "Editor's Note" which followed my article "Mounting a Quad Antenna" in August AR.

(a) A locking pin is not essential. The winch and cable are designed to carry the light load of the top mast and quad (80 lbs.) at all times. Even if the mast were to fall the top flange which carries the quad would come to rest on the top of the sleeve and no damage would be done so the word "safety" is quite out of place.

The locking pin which you have added to my design would prevent the beam turning and would make the tower useless. It would take two men to remove the locking pin as you have shown it — one to climb the mast and the other to operate the winch. This would defeat the whole object of the design, which is to allow instant raising and lowering.

(b) A two-sleeved bearing would be harder to set up and align. An 18 in. bearing has proved ample in practice.

(c) There is no need for a thrust bearing at the bottom of the mast. The arrangement with the mast hanging on the wire operates well and the mast is easy to rotate. A thrust bearing is outside the scope of amateur manufacture.

(d) The calculated load on the holding down bolts is less than 600 lbs. This would require a bolt cross section of 0.06 sq. in. at a stress of 10,000 lbs. per sq. in. A 1/2 in. bolt has twice this area at the bottom of the thread.

(e) The 6 in. dia. 3 ft. 6 in. deep concrete footings are ample. I calculated that the uplift on the windward side bolts with the maximum wind load is less than 600 lbs. My experience as an engineer on civil construction works has shown that concrete rammed into a bored hole as above can easily withstand this load.

I was able to prove this when I tried to remove a footing to shift a tower to another site. I excavated around the footing until only two feet remained in the ground. I saturated the hole with water overnight and using a lever by which I could apply an upward force of 500 lbs. I was unable to shift the footing.

A footing three times the diameter would require nine times the concrete and would weigh 860 lbs. which is 260 lbs. more than

is necessary without allowing for the grip of the earth.

(f) If the base was made a metre square and the tower was uniformly tapered the tower diagonals would have a length of about 4 ft. and as a 1/4 in. rod would not take any compression load at this length the diagonals would have to be increased to 1/2 in. pipe or else cross diagonals of 1/4 in. plus horizontals of 1/2 in. pipe would be required.

Whatever the spacing of the verticals the same total length of diagonals is required so that the uniformly tapered tower would cost more in material and as each diagonal would have to be separately cut, mitred and hollow ground, would be more difficult to set up.

The diagonals for the 8 in. spaced verticals are zig-zag bent from a 20 ft. length of 1/4 in. rod using a jig. This operation takes only a few minutes and then the diagonals (in one piece) are sprung in between the verticals and welded.

The uniformly tapered tower would require a separate ladder and the winch would require a base welded to the tower.

I have made or helped to make four of these towers for friends and after use from two to four years no disabilities have been found. I am disappointed that your Technical Editor and Draftsman, who do not appear to have any structural qualifications or experience should alter my design to make it unworkable and make suggestions which have no value.

Yours faithfully,

J. A. Gazard, B.E. (Civil).



Mr. J. A. Gazard VK5JG,

Dear Sir,

We agree with you that you have some cause for complaint about the diagrammatic addition of a locking pin to your mast/tower design as published in August AR. However, it was not intended to be more than a general indication that in the draftsman's opinion some such device was necessary. Further correspondence with him would have delayed publication by at least another month. We agree that as indicated on the drawing the device would be unworkable. He made a number of additional comments on the design, about which he was obviously unhappy. These were borne out by a few quick editorial calculations and resulted in the post-

script to which you have objected. I would like to discuss the subject in rather more detail, taking the various points in the same order as you have raised them.

(a) A locking device of some kind, mainly against rotary forces, is usually needed on a beam system, if for no other reason than to reduce loads on the rotator in strong winds. It could be controlled from the ground by a lanyard, or perhaps electrically actuated. With your design it could be safer not to rely entirely on the winch cable for support, particularly if the mast were left fully up and strong winds developed while it was unattended. If the mast did fall, it would "come to rest" with an impressively high shock load.

(b) The exact form of top sleeve(s) is dependent on antenna wind loading; see later.

(c) The thrust bearing envisaged at the base of the mast would allow it to turn without the cable wrapping around it.

(d) The load on the hold-down bolts depends also on wind loading. See later.

(e) The mass of the footings should be commensurate with the loads on the hold-down bolts. Agreed that the "grip of the earth" is a significant bonus over mass alone, but difficult to estimate, dependent on soil properties, and probably best neglected in a conservative design.

(f) We agree that more material would be required for a uniformly tapered tower, and that fabrication would be more difficult. This was only a suggestion, based on the draftsman's comment that "a bend in the pipe here is a potentially weak point".

Now for some pessimistic assumptions. First, it cannot be guaranteed that the mast will always be lowered into the tower before a storm strikes, so its design should be adequate to survive the strongest likely wind while fully erected. Second, since it might be constructed and erected in any part of Australia (or elsewhere) the design wind velocity should be at least 80 m.p.h. Some State building codes may well call for 100 or 120 m.p.h. The minimum permitted anywhere in Australia (for 50 year expected life) is 27 metres/sec. (97 km/hr. or 60 m.p.h.) and in most places the recorded maxima are at least 40 m/s (90 m.p.h.). Australian Standard 1170, part 2 (1975), covers the subject in great detail. Further, although the antenna(s) you have used on the mast may have been relatively small, in the absence of any direction to

the contrary someone may try to put two or three good sized beams on it for several bands.

To plug in some figures (using Imperial measurement since they were those of the original drawing, later metricated): The flat-plate equivalent windage area for the antenna(s) plus mast might be up to about 5 sq. ft., effectively at the top of the mast 25 ft. up. Wind load at 80 m.p.h. (0.0042AV<sup>2</sup>) = 135 lbs. Moment arm at base 2½ ft. so uplift on bolts is 10 x wind force, i.e. 1350 lbs. or 675 lbs. per bolt. This should be the weight of each footing (rough agreement with your stated 600 lb.). But 6 in. dia. x 3 ft. 6 in. deep is only 0.7 cu. ft. Density of concrete 137 lb./cu. ft., so weight of footing just under 100 lb. Very much less than bolt load.

Bolt strength. A ½ in. Whit bolt has root cross-section of 0.1215 sq. in., so tensile stress = 675/0.1215 = 5600 p.s.i. Agree this is not excessive, i.e. ½ in. or 12 mm bolts OK. I think this error came about because the draftsman did not get a copy of your text, and your drawing did not indicate the mast was square; he thought it was triangular, with only one bolt.

Top sleeve bearing. Again, your drawing did not clearly show it to be 18 in. long, nor specify where and how attached to tower. If welded only at the centre of the sleeve the weld stresses could be excessive. Incidentally, the mast base moment (12 x 135 = 1600 lb. ft.) will produce a maximum stress in the pipe approximating mild steel yield point of 30,000 p.s.i., for a pipe section modulus of 0.66 in.<sup>3</sup>. In other words the mast would be on the verge of failure if antenna area is 5 sq. ft. in an 80 m.p.h. wind. It might be on your own head if you don't let it down before the big storm!

In conclusion, I am sorry for the confusion which has arisen. I think eventual publication of your letter, this reply, and perhaps a little more information as well would help many tower builders. Regarding your final comment, neither the draftsman nor myself is as unqualified as might appear. He is based in Canberra (the distance does pose a liaison problem) and describes himself as having "had reasonable experience in the building trade, involving steel fabrication", although not a "structural engineer". My own backyard boasts a 50 foot tower and mast very strongly resembling yours in shape and materials. Of my own design and construction, it has supported at least three and sometimes four antennas and still stands after 20 years. It has a lanyard controlled locking device, but is not designed for quick raising and lowering.

73. W. M. (Bill) Rice, B.E. (Elec.), VK3ABP, Technical Editor.



The Technical Editor, 4/9/81.  
Amateur Radio,  
Dear Bill,  
Thanks for your letter of 2/9/81. I was very upset when I read the editorial comments

following my articles on the tower and would have preferred it not to have been published if those comments were to be added.

However it is too late now and I would ask that as well as printing my letter you acknowledge in the next issue that the addition of the locking pin was not part of my design and that I do not agree with the remarks.

Before referring to your points "a" to "g" I would point out that the whole idea of the design was that a light neat structure could be built if it was raised only when actually in use and I mentioned that the top mast would not stand up to gales in the raised position. The 2 in. pipe has an OD of 2.375 in. and ID of 2.055 in. I calculate the modulus of section as 0.577 in.<sup>3</sup> and with an area of 4.5 sq. ft. for the quad (neglecting the mast) at a height of 20 ft. above the sleeve the moment on the pipe would be 21600 in. lbs. and the stress in the steel pipe 37,000 p.s.i., slightly higher than your calculated 30,000.

The top mast is so easy to raise and lower that we (the other users and I) raise it when we switch on the rig and lower when switching off. This raising and lowering might be considered a disadvantage but it is a trade-off for a neat and cheap construction.

Referring to your points (a), (b) and (c):

(a) A quad is symmetrical about its rotating axis and has very small rotating forces due to wind. One tower had an electrical rotator with a brake which easily held the quad on the mark. The remainder constructed were rotated by hand from a wheel (sketch A). This wheel had holes in the rim at 15° intervals and a pin was dropped through to hold the quad in the required direction when operating. Some users leave this pin in when the mast is lowered but others, including myself, let the mast float with the idea that it will take a position involving least wind loads.

The fact that the winch wire winds around the mast prevents it from turning more than about 180 degrees under wind load, thus preventing breaking of the feed line.

(b) I found it difficult to obtain a tube of exact size for the sleeve. I have used an oversize tube and lined it at each end to fit but have found the most convenient method is to make a box of 4 angle irons as per sketch B.

(c) The winch cable is very lightly loaded (less than 80 lbs.). The winch ratchet wheel is 4 in. diameter of 3/16 in. plate, with 6 teeth ½ in. deep. It has proved quite safe in use and operates as a friction free thrust bearing. The only risk is that one might let go the handle when lowering the mast. However the way the ratchet and pawl happened to be made the ratchet teeth knock the pawl back into operation if the mast is lowered too fast. Sketch C.

(e) I know that "the grip of the earth" cannot be calculated but once in my

career I had to carry out tests on tension piles and my experience in pulling out poles with a crane has shown that the earth grip is always considerable and sufficient in this case. My attempt to remove a footing was further proof. In calculating the uplift on the footings it is necessary to deduct the deadweight of the tower and quad on each leg from the wind moment tension.

(f) The bend in the pipe was made by cutting out a notch before bending and then welding over the cut and laying on a large pallet. This gives a sharp bend and, as the horizontals and diagonals meet at this point, there is no weakness. The calculated stress in the ¾ in. pipe with mast lowered is about 6,000 p.s.i. at this point. Sketch D.

I had considered making a full drawing but as I am retired and have no access to drafting equipment I made a sketch showing cross sections and all details such as winch, ratchet, etc.

However, this would have needed so much space that I thought it better to supply sketches to the few who might require them for construction. They could be photo-copied and would not involve much work; but it appears now that it would have been better to supply all the details for publication.

73. John Gazard.

(Sketches overleaf)

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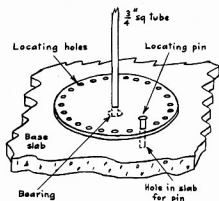
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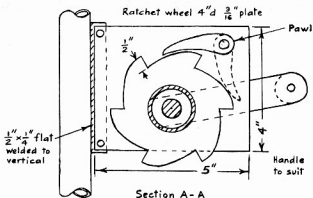
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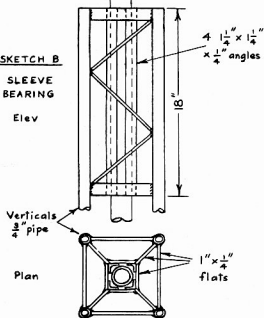
**SKETCH C WINCH DETAILS**

Mast 2" GI pipe

**SKETCH B**

**SLEEVE BEARING**

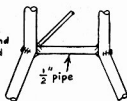
Elev



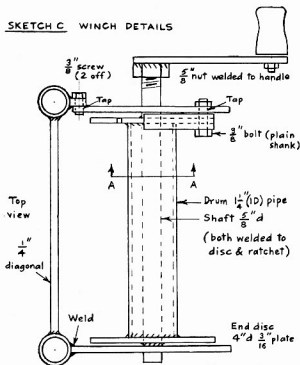
Plan

Cut, bend & weld

1/2" pipe

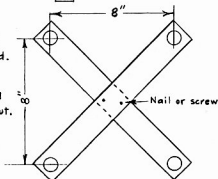


**SKETCH D BEND DETAIL**



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## FACTS ABOUT PRICE AND SERVICE

**BECAUSE** we sell equipment that is imported from the factory in Tokyo we are able to offer you huge savings. 100% of one brand alone is imported direct from Tokyo.

**BECAUSE** we deal directly overseas we are able to tell you of any new models often long before other local distributors and retailers are able to inform you.

**BECAUSE** we deal directly we are able to obtain parts with ease, which of course must mean we are in a better position to carry out service/warranty, etc.

**BECAUSE** we usually have the latest service bulletins and of course the parts, we are able to service warranted equipment with an average delay of only 5 days. (Not many can match that service — can they?)

**BECAUSE** our equipment is in factory sealed cartons, we believe this to be the main reason our service return rate is only 2% and, in any case, if the final quality control check by the manufacturers is not a good enough guarantee, then the BRAND should obviously be withdrawn from the Australian Amateur market until it is suitable. In other words — if the factory can't build them properly — no one can.

**NOTE:** If the equipment is removed from the carton, how do you know where it's been or what it's done or what's done with it? In our opinion, quality manufactured equipment need not be tampered with.

**BECAUSE** of all these facts, we have one example to prove the rule.

**EXAMPLE:** On Kenwood equipment alone not one — no, not one of the transceivers sold by this company in the last 40 weeks up to the lodging of this advertisement with AR magazine, had been returned for service under warranty, or out of warranty, either. We firmly believe this is because our equipment is sold in non-tampered with factory cartons. We believe it is your right as an Amateur and as a customer to receive your purchase in new, untouched condition. If you want your equipment tampered with, touched or on air tested, then we will be unable to supply you. We believe the Amateur to be the best judge of what is fit for him to use.

**DON'T YOU?**

## WARRANTY

**BECAUSE** of the above proven reliability of Kenwood equipment sold by us over the past 40 weeks, we would like to introduce to you our **NEW — 12 MONTHS WARRANTY** on all of our Kenwood products. Yes — now all our Kenwood equipment is covered by our 12 months warranty. Can you afford to buy your Kenwood elsewhere?

**PRICES SUBJECT TO CHANGE — BUT NOT OFTEN**

## Dear Amateur,

It's definitely worthwhile to ring our company LAST. If you write or phone we will give you a price, you definitely don't have to call in person to get our best price. Remember, if we can sell it to you cheaper WE WILL.

**THE SNOWY RIVER COMPANY P/L**  
**MAIL ORDER — P.O. BOX 227**  
**GREENACRE 2190, N.S.W.**

All equipment in factory sealed cartons.  
9-5 MON. TO FRI — 9-12 SAT.  
**PHONE: (02) 709 1557**

## "AMATEURS NOTE"

Some amateurs think that R.R.P. means "Recommended **Rip-off** Price". To avoid further confusion, we will now sell at A.D.P., that is —

**"AMATEURS' DISCOUNT PRICE".**

Remember — Why pay more than A.D.P. (R.R.P. is too much).

A.D.P. is only a recommended price. There is no obligation to comply with such prices. Dealers are quite free to sell at lower prices if they so wish.

Hams pay A.D.P.	EGGS	
"AMATEURS' DISCOUNT PRICE" — A.D.P.	PAY TOO MUCH	R R P

Kenwood Price List	HAM(S) and EGGS	
TS130S	\$650 A.D.P.	\$847 R.R.P.
Non-Woodpecker		
TS830S	\$985 A.D.P.	\$1095 R.R.P.
TS830M	\$999 A.D.P.	Who knows
TS130S	\$689 A.D.P.	Who knows
TS530S	\$749 A.D.P.	\$833 R.R.P.
TS180S	No longer in production	
TR2400	No longer in production	
TR7850	\$469 A.D.P.	\$495 R.R.P.
TR7800	No longer in production	
TR7730	\$349 A.D.P.	\$379 R.R.P.
TR9500	\$595 A.D.P.	\$735 R.R.P.
TS600	No longer in production	
TS660	New release	
R100	\$469 A.D.P.	\$527 R.R.P.

Most current list available at publication.	Includes 2½% Sales Tax increase.	Does not include 2% Tax increase.
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# FORWARD BIAS

(VK1 DIVISION)

## SO YOU NEED A TOWER

In the ACT the approval of towers for amateur and other radio purposes is the responsibility of two government authorities:—

The National Capital Development Commission is concerned broadly with the environmental impact aspects of appearance and siting of the proposed structure. Generally such towers must be free standing, at the rear of the dwelling, and as inconspicuous as such a structure can be made. While not essential to the approval of the application it is a good plan to have briefed your immediate neighbours with full details of the proposed structure and, if possible, obtain from them a letter indicating that they have no objection.

The Building Section of the Department of the Capital Territory is responsible for the approval of the engineering aspects of the proposed tower and antennas it will carry including structural design, vertical and lateral stresses, materials to be used, foundations and anchoring details, etc.

Each application is treated individually — there are no officially approved types of tower, although your application will have a better chance of success if it is a type that you know to have been previously approved in the ACT. If you propose to erect a tower you should speak first to friends who have gone this road and then with the Building Section before you outlay any money. The final hurdle and, if you are like me the hardest of all to clear, will be in obtaining the financial approval of the Department of XYL.

## MULTICULTURAL TV TRANSMISSIONS

It is noted that there has recently been a call for the introduction of Multicultural TV to serve the ACT and the surrounding areas. On the basis that we are TV viewers, as well as radio amateurs, we should perhaps take the view that such broadcasts would make a welcome addition to the rather sparse TV fare offering to viewers in this area. However, having in mind the mutual interference problems existing between the internationally unstandard Channels 0 and 5A and our 6 and 2 metre bands it is the contention of the VK1 committee that ALL new Multicultural TV transmissions should be confined to the UHF TV channels as originally intended.

This matter will be represented by VK1 to the Minister for Communications — the local House of Assembly — local Federal Members and Mr. Al. Brasby.

I wonder if it would be possible to convince the TV receiver manufacturers that there is a dollar in it for them if MCTV transmissions are confined to the UHF bands?

## QSL PSE/TKS

Have you ever given more than a passing thought to the amount of work — and cost — that goes into the operating of your QSL Bureau?

Sorting the inward cards is a big job in itself, but I'm glad that I don't have to do all that sorting, wrapping, addressing and posting the vast number of outward QSL cards.

Our most recent despatch overseas and local cost the Divisions about \$105. Sure, that's small change by VK2 or VK3 standards, but a significant cost for VK1.

In the past, and I can't for the life of me see why, VK1 has handled outward QSL cards for non-members of the Institute free of charge.

Well you guys out there, the honeymoon is over — outward cards for non-members will in future cost 5 cents each.

Quick question: Why 5 cents only on outward cards? It's the inward cards that qualify us for the awards.

## DIN A4

No — it's not one of the new emission designators. It's a sheet of paper 297 x 210 mm which has been for some years the Australian standard letter size paper. It is a little bigger than the old quarto and considerably smaller than the old foolscap size papers.

But did you ever try to photocopy a foolscap sheet on to A4, without either photo-reduction or A3 capability, on your saltmine photocopyer? It just can't be done.

So you scribes out there who will persist in using foolscap paper, what about you get with it and join the rest of us who have adopted decimal coins, metric weights and measures, etc.

73. VK1KV.

# VK2 MINIBULLETIN

## COUNCIL REPORT

At the September meeting, Council was pleased to welcome Albert Amateur Radio Club to affiliation with the NSW Division, making a total of 32 clubs now affiliated. The evening broadcast relays on 80m and 10m have been discontinued and the signals now originate from Dural. Thanks to Peter VK2NGK, Steve VK2BGL and members of the Gladsville Radio Club who have provided relays in the past.

UHF repeater applications from Blue Mountains Amateur Radio Club on channel 8375 and TK/Southern Highlands Amateur Radio Society on channel 8025 were approved for submission to DOC Sydney. WICEN has received permission for the use of a Chatswood site for their repeaters on channels 7150 and 8275.

Council decided to print Certificates of Affiliation for affiliated clubs. Thanks to Steve VK2VHP for designing the certificates. The Division's contribution to the Tower Fund was \$650. Totals costs of the case were \$3,200, most of which was

raised from donations. Council would like to thank again all those who donated so generously to the appeal.

Details of three clubs affiliated with the Division:—

## Central Coast Amateur Radio Club

PO Box 238, Gosford 2250.

Net: Tuesdays at 8 p.m. on 3565 kHz using VK2AFY/P.

Meetings: 1st and 3rd Fridays at Club rooms, Dandaloo Street, Kariong.

President: Terry Davies VK2DKD; Vice-President: John Pogson VK2DBC; Secretary: Suzanne Wells; Other Committee: Les LeBreton VK2AKT, Ray Wells VK2BVO, Stan Dogger VK2VFW/ZRD, Bob Leane VK2ZLV.

Magazine: Smoke Signals, published monthly.

Repeaters: VK2RAG on 6750 at Somersby. Time out 4m, ERP 20W. VK2RUG at Somersby. Time out 4m, ERP 3W.

Field Day: February at Gosford Showground.

## Griffith Radio Club

PO Box 4, Griffith 2690.

Net: Wednesdays at 1100Z on 28.48 MHz, using VK2DBK.

Meetings: SES Headquarters, Griffith, 3rd Mondays.

President: Graeme VK2DGW; Vice-President: John VK2YEZ/NQL; Secretary: John VK2DFC; Other Committee: Leon VK2DLN; Social, VK2DXI, VK2BBL, VK2YRW; Repeater, VK2YEZ, VK2YNC, VK2ZJL.

Repeater: VK2RGF on 6850 at Griffith. Time out 3.5m, ERP 10W.

## Coffs Harbour and District Amateur Radio Club

PO Box 655, Coffs Harbour 2450.

Net: Mondays at 8 p.m. on 3610 using VK2DVF.

Meetings: 3rd Wednesdays at Orara High School, Bray Street, Coffs Harbour.

Classes: AOCOP and NAOCOP at Orara High School Wednesdays.

President: Max Francis VK2BMK; Vice-President: Bruce Telfer VK2DDU; Secretary: Dave Harding VK2DUR; Other Committee: Margaret Nally VK2DQU, Rick Fletcher VK2BKV.

Repeater: VK2RCH on 6650 north-west of Coffs Harbour. Time out 3m, ERP 20W.

Field Day: Easter at Urunga.

## COMING EVENTS

Saturday, 7th November: Divisional auction at 14 Atchison Street, Crows Nest.

Sunday, 15th November: Blue Mountains Field Day at Springwood.

Saturday and Sunday, 14th-15th November: WICEN Regional Co-ordinators' Conference.

NSW members and clubs are invited to submit news for inclusion in this column. Please address it to VK2 Minibulletin, PO Box 123, St. Leonards 2065. News for January AR should reach us by 29th November.

Susan Brown VK2BSB.



# AMATEUR RADIO



## HUGE SCOOP PURCHASE!



### SAVE ON THE 'NO FRILLS' FT107

**ONLY**  
**\$850<sup>00</sup>**  
**WHY PAY**  
**\$1278?**

#### YOU REAP THE BENEFIT

Here's your chance to up-date to one of the best transceivers in the world, at a true bargain price!

Dick Smith has just made a scoop purchase of the entire manufacturer's stock of the famous FT107M transceivers - at an incredible discount.

They have all the outstanding features that have made the FT107M Australia's most popular top-line transceiver, and include all of the current legal amateur bands. (They don't have the new WARC bands included - but why pay hundreds of dollars more for bands we may NEVER get to use?)

Hurry, stocks are strictly limited - and as we bought the entire manufacturer's stock, this offer can NEVER BE REPEATED!

D-2863

#### SPECIFICATIONS:

**Frequency coverage:** 160, 80, 40, 30, 10  
**Modes of operation:** LSB, USB, CW, AM, FSK  
**Input power:** 240W DC (SSB), 80W DC (AM, FSK)  
**Sensitivity:** 0.25  $\mu$ V for 10dB S/N (SSB/CW/FSK), 1  $\mu$ V (AM)  
**Selectivity:** 2.4kHz (-6dB), 4kHz (-60dB)  
SSB cont. variable from 300 to 2400Hz  
**Carrier Suppression:** better than 40dB  
**Spurious radiation:** better than 50dB below rated output  
**Power requirements:** 240V & 13.5V supplies built-in

### THE MANY BENEFITS OF BUYING YAESU FROM **DICK SMITH**

- We sell more Yaesu than anyone else: so we have the best stocks, at the best prices (tell us if we're wrong!)
- We have the largest service centre: if something does go wrong with your Yaesu, we can fix it fastest!
- We honour Yaesu's 12 month guarantee - beware of others who may offer you only a 90 day warranty.
- Dick Smith Electronics have over 22 stores throughout Australia - plus over 200 approved re-sellers. You're never far from friendly help.
- We know amateur radio - we have 32 licensed amateur radio operators on the staff including Dick Smith & Ike Bain the Managing Director.

**AND WE GIVE YOU A FULL 12 MONTH GUARANTEE!!**

FINANCE TO APPROVED PERSONAL CUSTOMERS OR USE YOUR BANKCARD

**CHECK  
THESE  
OTHER  
GREAT  
DEALS**

## Most popular communications receiver in the world!



### 20,000 KM RANGE YAESU FRG-7

More Yaesu FRG-7's are in use throughout the world than any other communications receiver. Check these outstanding features:

- Features the famous 'Wadley Loop' for rock solid stability & minimal drift
- Triple conversion superheterodyne circuit for extremely high sensitivity with excellent selectivity (better than 0.7uV, 6dB @ 3kHz & 50dB @ 7kHz)
- Operates from 100/120/220/240V AC or 13.5V DC
- Weighs only 2kg, size 34 X 15 X 29cm
- 2IC, 22 transistor & 16 diode circuitry

D-2850

~~WAS \$359.00 LAST YEAR!~~

**ONLY \$359.00**  
**SAVE \$40**

**DICK SMITH Electronics**  
Australia's largest supplier and Yaesu factory approved distributor & service centre.

## Yaesu's brilliant FRG 7700/SW



There's not much we need to say about this outstanding receiver: let the features speak for themselves

- 2MHz - 30MHz continuous!
- All mode - including FM (great with converters)
- Digital frequency readout, with digital clock
- Superbly easy to operate: set pre-selector, then tune!
- Timer for tuning receiver on/off, plus control of external equipment eg. (tape recorder)

D-2841

**EXCLUSIVE TO DICK SMITH**

**ONLY \$499.00**

### OPTIONAL MEMORY UNIT

Gives you single button recall of any of 12 chosen frequencies. Great for monitoring 'skeds'.

See Simple connection instructions etc. D-2842

The FRG 7700 is an ultra compact antenna tuner.

Designed to operate from 150kHz - 30MHz, it provides the correct impedance for the receiver, rejecting unwanted signals. Also has a built-in 60-80 max. attenuator plus a two-section lowpass filter aid for rejection of strong signals above 24MHz.

### Antenna Tuner \$71.50

D-2843

### FRV 7700 VHF 2-6 metre converter

Increase the listening range of your FRG-7700 with this high performance frequency converter. You'll be able to listen to all the amateur activity 'up top', plus aircraft & land mobile stations, etc. Makes great VHF listening!

**ONLY \$124.50**

D-2844

### MOBILE CHARGER



The Yaesu PA-2 is a mobile charger, comes pwr supply. Suited for the FT-207R & FT-208R. Use the power from your 12V battery when mobile. Also recharges nicads in your battery pack.

**ONLY \$29.95**

## TOP OF THE RANGE SSB/HF transceivers



### FANTASTIC FT-107 DMS

This has to be Yaesu's finest transceiver. A masterpiece of solid state engineering - you must have to take the cover off to see the thought & care that has gone into its design. Full band coverage, of course, in all modes (SSB included). A massive 240W PEP input, with features like RF speech processor, variable bandwidth, superb speech blanker PLUS 12 channel memory. The FT-107 is everything you want from a transceiver and a little bit more.

D-2871

### ONLY \$1328

### Antenna Coupler FC 107



Problems with antenna max-match on your FT-107? Not with this superb coupler. Designed to match the 107 styling, but just at home with any transceiver. Huge meters for power output and SWR. Superb quality!

**ONLY \$205**

### FT-902D our most popular HF transceiver



D-2853

The FT-902D has just about everything you've ever wanted in a transceiver. All modes (yes, even FM great with transverters), & all bands from 160 to 10M (including WARC). You get digital readout, RF speech processor, rejection tuning, 100W PEP output, etc. etc. So come in from out there & check it out & ask for your free brochure.

**ONLY \$1195**

### Antenna Coupler FC 902



This coupler can feed anything from a random length of wire to a beam. Match the load perfectly so you can deliver more power up there where it's wanted! Suits all bands, has built-in SWR/pwr meter as well 50 or 75 ohm system, 500W rating.

**ONLY \$265**

D-2855

## NEW! NEW! NEW!

### VHF Handy FM Transceiver FT-208R

The FT-208R transceiver brings a new flexibility to today's active 2M operator. An easy to read LCD display is coupled with a 4 bit microprocessor, bringing 10 memories & a scanning function. Only with Yaesu can you get these features at such an economical price. Check it out NOW!



TEN MEMORIES & SCAN FACILITIES

**ONLY \$368**

INC. CHARGER

Cat D-2899

## Mobile or base



**FT707** Yaesu has used the state of the art technology & put it into 707. This little wonder contains all the outstanding features that most big rigs lack. It's a mode transceiver. You get digital readout, all the things the amateur needs for reliable operation. You've waited a long time for a rig like this, so take the plunge now, it's well worth the money. **ONLY \$795**



**Antenna Coupler** Get the most from your FT-707, use the Yaesu FC-707 antenna coupler & ensure your transceiver always delivers the power should. Here all the features you need: pwr/SWR meter, in-built dummy load, all band coverage (including WARC), less than 0.5dB insertion loss. **ONLY \$149.50**

**Base operation?** just add the FT-707 base supply & you're away. You get fully regulated 13.5V at 20A. Has plug-in connections so you can't cause problems, plus clarity. **ONLY \$175**

## Digital VFO



Long'n slim - intended to sit under the 707. 12 memories, up/down scanning, in 10Hz steps & receiver offset tuning. Power by FT-707. **ONLY \$299.50**

## Mobile bracket

Don't let your valuable 707 jump all around the car. Fit it in this superb mounting bracket for safety & security. Also holds the digital VFO. A must for the serious mobile operator. **ONLY \$36**

## Economy HF/SSB The FT 101Z



Here is one of the finest transceivers in the 101 family, the FT 101Z. This brilliant performer is packed with a host of features, that the more expensive radios lack. So why pay more when you can get features like RF speech processor, variable bandwidth, all current HF bands (inc. WARC) 180W input (SSB/CW) & AM/CW/SSB operation & many other features to numerous to mention. So do yourself a favour and check it out NOW at a store near you! **ONLY \$795**

## FT 101ZD

Remember the famous FT 101B? And the 101Z? Here is one of the most popular of the 101 series. It has all the features of the famous 101Z, but includes digital frequency readout. Stocks are limited so have stock left. **ONLY \$910.00**

## NEW! FT 101Z FM

Now you can have the features of the renowned FT 101ZD with the benefit of FM. Get crystal clear option & double band interference. It makes a great com. **ONLY \$885**

## DC-DC Inverter

Want to go mobile? Add this superb DC/DC inverter to your car battery (13.5V nominal). Don't tie yourself to your shack - get out there where the DX is great! **ONLY \$77**

## FL-2100Z 1.2kW Linear Amp.

If you want a linear amp, built like a strong signal, try the new WARC FL-2100Z. Australian legal limit of 400W PEP the FL-2100Z is just "coasting" here for reliable operation & gives plate voltage, VSWR & DC readings from its two large meters. Suitable virtually all amateur transceivers on the market. **ONLY \$580**

## Yaesu Fan

Give your FT-101Z a break by installing a cooling fan. Comes with all the fittings, 110V operated (runs from a tap on the transformer). **ONLY \$29.95**



## Yaesu's top 2 metre FT 480R has FM/CW & SSB



10% OFF Yaesu call this their 'total performance VHF computerised transceiver'. And total performance it is! As the top of the line Yaesu 2M family you'd expect a lot. You get FM, SSB, CW over the full 2M band, with two VFO's, auto power switch & much, much, more. To sum it up in one word, superb! **ONLY \$525**

## PLL scanning 2 metre FT 227RB



One of our most popular Yaesu transceivers we have ever had the pleasure to operate the incredible FT-227R. The PLL scanner will just pass the scan button on the microphone. Has four memory channels, power output of 50W, & the receiver has better than 0.3uV sensitivity (10dB S/N). It operates on 13.5V DC, with protection against reverse polarity & hard to go past the FT-227RB. **ONLY \$319**

## SPECIAL OFFER FREE

If you purchase a D-4100 base with resonator, we will give a **FREE** 2M stub (D-4102) worth \$11.25 at no extra charge.



GUTTER MOUNT Cat. D-4100		When you buy the gutter mount base & 2M stub, you're on the air on 2M immediately. As you want the HF bands, simply buy that band resonator/antenna whip & screw it into the 2M stub. You only have to buy the whips for the band you want. Go mobile with Yaez.	
RSL M - 7 40M ANTENNA	\$25.50	RSL - 7 40M ANTENNA	\$25.50
RSL - 2A 2M STUB	\$11.25	RSL - 14 20M ANTENNA	\$25.50
RSL - 2A 2M STUB	\$11.25	RSL - 21 15M ANTENNA	\$25.50
RSL - 145 6M/2M ANTENNA	\$27.50	RSL - 28 10M ANTENNA	\$25.50
RSL - 2A 2M STUB	\$11.25	RSL - 28 10M ANTENNA	\$25.50
RSL - 2A 2M STUB	\$11.25	RSL - 28 10M ANTENNA	\$25.50

## NOVICE POWER HF/SSB

There aren't many transceivers available in Australia which are particularly suited to novices - but want disgrace themselves either. The Yaesu FT-7B suits the novice as well as the full call amateur. Gives you all the current HF bands with power output up to 50W. You also have the option of AM, CW or SSB with the choice of VFO or a crystal locked channel. The FT-7B is ready when you are, hook up your power & antenna & away you go! **NOW ONLY \$549**

**DICK SMITH WILL BEAT ANY GENUINE ADVERTISED PRICE ON YEASU EQUIPMENT.**



# NEW! NEW 2 METRE PORTABLE FT 290R



**ALL MODE  
FM/SSB/CW**

The FT 290R is a highly sophisticated compact multi-mode transceiver for the 2M amateur band. Featuring PLL synthesis in 100Hz, 1KHz, 5KHz, or 10KHz steps. The FT 290R utilizes a Liquid Crystal Display for digital readout for the operating frequency. 10 memories, scanning of the band or memory channels, two VFOs, & receiver offset tuning makes the FT 290R a significant breakthrough in technology.

**ONLY \$395<sup>00</sup>**

# NEW! NEW

**VHF Power boosted  
linear amp FL-2050**

Ideal for  
all 2M  
rigs



Add this to your hand held for real mobile power. Also suitable for SSB, CW, AM etc. Operates from 13.6V DC up to 15W input for maximum power. Includes 12dB receiver pre-amp, with automatic transmit receive control.

**ONLY \$239<sup>00</sup>**

# The 1981 Radio Amateur's Handbook ARRL 640 pgs

This book is packed with subjects like: 600 MHz frequency counter, Link-Coupled Transmatch, Modulated RX Noise Bridge, IC op amp and sweep tube charts, Antenna/Preamplifier system for EME, Modern Band - Edge Marker, Pin Diode QSK System, - plus heaps more, too numerous to mention. Has 22 chapters of the usual high standard plus revised template drawings for a variety of circuit boards and some revised chapters eg. Power Supplies. A must for the shack!

**10% OFF ONLY \$14<sup>35</sup>**

B-2218



## AMATEUR CALLBOOKS FOREIGN RADIO

The Foreign Callbook contains over 300,000 licenced radio amateurs in countries all over the world, giving call letters, name and address. Ideal for DXers.

**ONLY \$21<sup>95</sup>**

## UNITED STATES N, K & W LISTINGS

Contains the call letters, class name and address of over 300,000 licenced radio amateurs in the United States, its possessions and territories. Great for the active amateur!

**ONLY \$22<sup>95</sup>**

B-2260

## Antenna Anthology

The best of recent QST HF antenna articles and theory presentations collated into one useful & very handy reference book. Ideal for those antenna experimenters!

**\$6<sup>25</sup>**

## All about cubical quad antennas

The world famous classic on Quad! Gives new dimensions, revised g3x data, Quad V Yagi, etc. etc. Correct dimensions given for 6 to 80M.

**\$5<sup>50</sup>**

B-2304

## Q & A for the novice licence

Keith Howard VK2AKX

For the would be amateur, this book puts a question then gives the answer in simple but explicit terms, an excellent means of learning. Covers everything from A-Z.

**ONLY \$4<sup>95</sup>**

B-2315

## WORLD ATLAS

This 20 pg. colour world atlas gives diagrams of all the continents, plus the Polar projection & the West Indies - Caribbean area. A must for the serious DXer.

**ONLY \$4<sup>20</sup>**

B-2268

## Radio Amateur prefix map of the world

Shows the prefix on each country plus capitals & major cities. Also DX zones.

**ONLY \$2<sup>20</sup>**

B-2264

## DICK SMITH GREAT CIRCLE MAP

Azimuthal equidistant projection of the world, with Australian Amateur frequencies, international radio prefixes & international Q signals. Centered on Australia.

**ONLY \$3<sup>00</sup>**

B-4502

# DICK SMITH ELECTRONICS

**MAIL ORDER CENTRE: P.O. Box 321 North Ryde, NSW 2113. Ph. (02) 888 3200**

**NSW:** 145 Parramatta Rd Auburn 648 0558. 613 Prince Hwy Blakehurst 546 7744. 818 George St Broadway 211 3777. 531 Pittwater Rd Brookvale 93 0441. 147 Hume Hwy Chullora 642 8922. 162 Pacific Hwy Gore Hill 439 5311. 30 Grose St Parramatta 683 1133. 125 York St Sydney 290 3377. 172 Macleay Rd Tighes Hill 61 1896. 263 Kerra St Wollongong 28 3800.

**ACT:** 96 Gladstone St Fyshwick 80 4944. **QLD:** 166 Logan Rd Buranda 391 6233. 842 Gympie Rd Chermada 59 6255. **SA:** 60 Wright St Adelaide 212 1962. **VIC:** 399 Lansdale St Melbourne 67 9834. 656 Bridge Rd Richmond 428 1614. Cnr Dandenong & Springvale Rd Springvale 547 0522. 260 Sydney Rd Coburg 383 4455. **WA:** Cnr Wharf St Albany Hwy Cannington 451 8566. 414 William St Perth 328 69 44.

**Order Value**  
\$5-\$9.99 \$1.20  
\$10-\$24.99 \$2.20  
\$25-\$49.99 \$3.30  
\$50-\$99.99 \$4.40  
\$100 or more \$6.00  
These charges for goods sent by Post in Australia only - Not airmail overseas or road freight



# VK4 WIA NOTES

# Ham Radio Horoscope

## DIVISIONAL SERVICES

Are you making best use of the services offered by the Queensland Division? Did you know, for instance, that our Awards Manager, Don VK4UA, can check your cards for various awards? The Outwards QSL Bureau not only allows you to send your cards around the world for 2 cents each, it can provide you with QSL information for those rare DX stations. The Inwards QSL Bureau co-ordinates all incoming cards, sorts them and makes them available to all amateurs. Do you purchase books from the Book-shop? It carries a wide range of technical literature at very reasonable prices — look at the list in this month's QTC.

## RADIO TOWERS IN VK4

The May issue of QTC carried an informative article on local government vs. towers. In view of the problems now being experienced in other States, this is a "must" for anyone's reading list. Send for a copy if you don't have one.

## RADIO CLUB WORKSHOP

Your radio club has been requested to send in ideas and motions for next year's workshop. What did you contribute? It is proposed that this time a "live-in" weekend will be arranged and it promises to be a very productive meeting. Get your motions in now — this year we will accept general motions from members who are not club members.

## JOHN MOYLE NATIONAL FIELD DAY

This popular field day weekend is on again this February, and now is the time to commence your planning. The Radio Amateurs' Group VK4WIZ has proven itself to be the best field day club in Queensland, if not Australia, and is looking for some competition this year. Who is going to take up the challenge? Your club? Look for the slightly altered rules in January AR.

## COUNCIL ELECTIONS

It is that time of the year again. You are probably aware that the affairs of your Division are managed by twelve amateurs elected annually as the VK4 Council. Have you ever considered nominating? This is a positive way in which you can contribute to the organization of your hobby. Think it over then arrange for two members to nominate you as soon as possible.

## HOW TO GET UP-TO-DATE INFORMATION

Listen to the news each Sunday, most bands 0900K on phone and 1000K on RTTY (VK4RBT). Council may be contacted via the news re-broadcast call-back on Mondays, 3605 kHz at 1930K, the Queensland net each Thursday, 3605 kHz at 1930K, or on the Radio Club net each Tuesday, 3605 kHz at 1930K, or via GPO Box 638, Brisbane 4001. Keep us in touch with you.

VK4DT.

## HAM RADIO HOROSCOPE

### AQUARIUS: JAN. 20-FEB. 18

You have an inventive mind and are inclined to be progressive. You lie a great deal, like giving a report 40 over 9 when the other stations is barely S3. You forget cards for DXCC. People think you are stupid, but that's because you come across that way.

### PISCES: FEB. 19-MAR. 20

You are imaginative and can find DX stations at the bottom of any pile-up. Your talent is particularly adept when following OSCAR stations around as they shift frequency. You do get confused now and then and work your own station.

### ARIES: MAR. 21-APR. 19

You are quick tempered, and tend to respond with bitter sarcasm when people's operating practices offend you. But when you do the same thing, you can't take the criticism.

### TAURUS: APR. 20-MAY 20

You are practical and persistent, dogmatic. Most people think you are stubborn. You keep on calling DX stations long after they have gone QRT. But this sometimes works and they hear you when they come on again the next day.

### GEMINI: MAY 21-JUNE 20

You are a quick and intelligent thinker, and people often admire you for your sense of timing in a contest. You are bisexual, which means you tail-end a lot.

### CANCER: JUNE 21-JULY 22

You procrastinate a lot, which is one reason why your shack is so messy and your VFO drifts. But you are sympathetic and understanding, and people always ask you to help them with the messy jobs, like changing gears in their rotators. You do help them, too, when you get around to it.

### LEO: JULY 23-AUG. 2

You think you're a born leader. Others think you are pushy. You are arrogant and a bully. That's why you win contests.

### VIRGO: AUG. 23-SEPT. 22

You are logical and neat, and you pick nits. You have quite a collection of nits, in fact, that you have picked. But some of them dried up. You tend to be unemotional and you fall asleep at the key a lot, and wake up sending your dreams. You really ought to see a psychiatrist.

### LIBRA: SEPT. 23-OCT. 22

You are artistic and have problems facing reality. You won't admit that the station you called came back to someone else, so you go back and give him a report, and chatter on while he works three or four other guys.

### SCORPIO: OCT. 23-NOV. 21

You are shrewd and unethical. You're the type of guy that starts rumours to throw the rest off the track, like getting everyone to listen on 14220 when the DX is really on 14250. Having two transmitters at the same time is a disgusting ruse.

### SAGITTARIUS: NOV. 22-DEC. 21

You are optimistic and enthusiastic, but not about ham radio. If you're an XYL, you are tolerant of ham radio. If you're a novice OM, you refuse to go for your AOCP exam because you hate to fail.

### CAPRICORN: DEC. 22-JAN. 19

You don't like to take risks, and you tend to be lazy. If you can, you get others to work DX for you so you can watch TV. You always have guest operators in contests. You should avoid standing still too long or you may take root and have to remain there forever.

ARNS Bulletin, April 1981.

## QSP

### SOME THOUGHTS ON THE ROYAL SIGNALS NET — 21.170

Late in the night when the XYLS have gone to bed, a few avid RSARS members in VK land sneak into the radio shack and tune up on 21.170 MHz at 12.30 GMT. The first sign that the RSARS net has started is Les' VK2NLE melodious voice, or George's VK4KY deep voice. Then out of the QRM and QRN comes G5UC and G4HLC. (Can they hear me?)

We patiently wait to be called in by Net Control, as he talks to the phantom GS with 5 x 9 signals into Sydney. As the clock creeps past midnight local time, there is a faint call from ZL band, followed by a booming 5 x 9 VE and the GS, GWs and GMs start joining the group.

It is now early morning as we creep to bed, hoping not to disturb the family. The net has been a good one — several new stations, some on voice and some on CW.

I am sure there are a lot of VK-ZL members who could join the net occasionally. It is an opportunity to work three continents, meet new and old friends on the air, and help other members gain the coveted VK-ZL RSARS Award. If you have a spare evening, please call into the net and join the group.

Roger Cordukes. 73 de VK4CD.

If you received this issue of Amateur Radio without being a WIA member or subscriber, it was not an accident. Please consider it an invitation to join the WIA. Details are on the enclosures.

WIA members receiving recruiting material in this issue, please put the material to good use by passing it along to a non-member with a recommendation to join.

# VHF-UHF AN EXPANDING WORLD

Eric Jamieson, VK5LP  
Forreston, S.A. 5233

## VHF/UHF BEACONS

Freq. Call Sign Location

For 28 MHz beacons refer October 1981.

50.005	H44HIR	Honiarā
50.008	JA2IGY	Mie
50.020	GB3SIX	Anglesey
50.023	HH2PR	Haiti
50.025	6Y5RC	Jamaica
50.035	BZ2VHF	Gibraltar
50.036	HC1JX	Quito
50.038	FY7THF	French Guiana
50.040	WA6MHZ	San Diego
50.048	VE6ARC	Alberta
50.050	ZS3E	South Africa
50.060	PY2AA	Sao Paulo
50.070	VP9WB	Bermuda
50.070	YVZZ	Caracas
50.080	T12NA	Costa Rica
50.088	VE1SIX	New Brunswick
50.100	KH6EQI	Pearl Harbour
50.106	ZS6LN	South Africa
50.120	4S7EA	Sri Lanka
50.498	5B4CY	Cyprus
51.022	ZL1UHF	Auckland
52.013	P2SIX	New Guinea
52.150	VK5KK	Arthurton
52.200	VK8VF	Darwin
52.250	ZL2VHM	Palmerston North
52.300	VK6TV	Perth
52.320	VK6RTT	Carnarvon
52.330	VK3RG	Geelong
52.350	VK6RTU	Kalgoorlie
52.370	VK7RT	Hobart
52.400	VK7RNT	Launceston
52.420	VK2WI	Sydney
52.425	VK2RAB	Gunnedah
52.435	VK3RMV	Hamilton
52.440	VK4RTL	Townsville
52.510	ZL2MHF	Mt. Climie
52.800	VK6RTW	Albany
144.400	VK4RTT	Mt. Mowbray
144.420	VK2WI	Sydney
144.475	VK1RTA	Canberra
144.500	VK6RTW	Albany
144.550	VK5RSE	Mt. Gambier
144.600	VK6RTT	Carnarvon
144.700	VK3RTG	Vermont
144.900	VK7RTX	Ulverstone
145.000	VK6RTV	Perth
147.400	VK2RCW	Sydney
432.440	VK4RBB	Brisbane
432.450	VK3RMB	Mt. Bunningyong

Only change of note this month to the beacon list is the frequency change of JA2IGY from 52.500 to 50.008, where it has already been heard. Advice from Graham VK6RO and confirmed by JR6IGG.

Tom VK5TL has written to say he copied the ZS5VHF beacon on 9/9 at 0640Z transmitting the following information: "ZS5VHF please QSL to ZS5TR or phone (03)175 3125 vvv ZS5VHF. Beacon position 29D 44M South, 30D 50M East, Natal, South Africa. vvv 28025550.005 and 144.925

MHz." Tom said the beacon was actually on 28.255 MHz. Last month I listed it as being on 28.2025 but that is obviously wrong. Someone has programmed the keyer incorrectly by putting an extra 0 in as the third digit. Thanks, Tom.

## NEWS FROM CANBERRA

After a long time it was good to receive a letter from Andrew VK1DA, who pointed out the reason the Canberra beacon on 144.475 uses a vertical antenna is that it is a former antenna used by repeater 6900, which has now been shifted to another site. The only chance to put another antenna, horizontally polarized, on the site is when the Department of Transport radar unit is off the air, so we may have to wait for that to occur! When something can be done there are hopes to include a six metre antenna on the mast as well for the proposed beacon on 52.475 MHz, which has been approved and allotted the call sign VK1RTC.

Apparently the multitude of HF, VHF and UHF transmitters on the various hills-top around Canberra make headaches for everyone, including DOT, whose equipment suffers wideband interference when certain refractive conditions exist to mix the medium frequency stations with the HF and VHF, etc. That's the worst of having so many good elevated sites to use!

Eddie VK1VP is currently working on a UHF FM repeater using one of the Philips donated W1FU units, under test it is providing about 3 watts to the antenna, which is a 13 element coaxial collinear. The system is destined for Mt. Ginini and there are hopes of increasing the power to 25 watts.

On the two metre scene in Canberra Andrew says 144 MHz activity has increased a bit over the years with the ready availability of small multi-mode rigs, but it seems few are really truly interested in DX. And it seems there generally exists more interest in 144 MHz in the country areas of New South Wales than in Sydney.

During the RD Contest Dick VK1ZAH operated portable from a ridgetop location on 52, 144, 432 and 1296 MHz. Dick scored over 400 contacts on those bands but only one Sydney station was worked! The FM channels in Canberra ran hot with 50, 51, 40 and 49 being used roughly in that order. On 1296 Dick was only able to work Neil VK1ZT and Bob VK1RC.

Bob VK1RC spent part of that weekend in Sydney and was staggered at the lack of activity on 2m FM. One station was heard to say he had been pretty active, then gave out number 013! It certainly gives the impression the Sydney boys are really browned off, which seems a pity.

Thanks for writing, Andrew, at least the rest of us know a little more about what goes on in your city, and some of the problems you encounter.

## NEWS FROM COCOS (KEELING)

### ISLANDS

Mike VK9ZYX writes from Cocos Island in the Indian Ocean to advise he is now fully operational on 6 metres using an FT625R into an adaption of G2BCX's 16

dB 2 metre beam, i.e. triangular reflector, 2 x phased driven elements and 5 directors. Seems to work quite well at 15 metres high.

Has tried often to call VK6 and VK8, but only ends up with JA QSOs, or hear them working the VK6s. The KH6EQI beacon is often heard. After experiencing 2 metre FM repeater operations in Australia, JA "pile-ups" are something different! Easily worked 100 JAs in four evenings for 28 prefixes. But Mike is still very anxious to work VK stations.

Mike is undertaking a linear amplifier project with the aid of info from VK9YA-VK5CCT and also looking at constructing a pre-amplifier. Also has a 2 metre 16 dB beam to be mounted on the mast and a lend of Alex's VK5CCT IC202 to try 2 metre DX and Oscar.

QSL to Mike Beall VK9ZYX, Cocos (Keeling) Island, Indian Ocean, Western Australia 6799, or via the QSL Bureau.

## WHAT'S HAPPENING IN THE WEST?

Graham VK6RO has just returned from a holiday in the north-west of VK6, and while there worked 433 JAs, one HL2 plus hearing H44PT, P29ZAS and VK8VF, all on 6 metres. Since 1979 Graham has worked more than 750 JAs whilst mobile, including three countries JA, KG6 and HL2, heard H44, P29 and ZS2. He says conditions at the home QTH for contacts to JA and other places is so poor he has to go north to work them! Equipment consist of FT680R, which gives 10 watts output on SSB, FM or CW and 3 watts on AM, also an IC502 3 watts SSB. Antenna is a homebrew quarter wave mobile whip.

This trip: SSB, 232 JAs up to 5 x 9 + 20 dB; AM, 89 worked up to 5 x 9 + 10 dB (didn't know there were so many AM stations still around . . . SLP); FM, 65 worked, some with 1 watt, 5 x 9 + 10 dB; CW, 47 worked with 599 reports, plus others at 1 watt. On the IC502, with its inbuilt whip antenna, signals from Japan have been up to 5 x 9 + 20 dB!

It is interesting to note that as Graham progressed further north the more contacts into Japan were being made, e.g. 3/9 Carnarvon 19 JA; 4/9 Karratha 21; 5/9 Port Hedland 6 plus VK8VF beacon; 6/9 Broome 98 JAs, plus Malay TV audio FM on 53.750 at 5 x 9 + 40 dB for several hours; 7/9 Broome 99 JAs; 8/9 31, 9/9 29 plus reception of JA2IGY on 50.008, very strong FM broadcast station, possibly Chinese, on 50.642 MHz at 0315Z; 10/9 still at Broome 68 JAs, heard P29ZSA on 50MHz working JAs, heard H44PT on 52.050 at 1123Z calling CQ but VK8GB grabbed him! 11/9 Pt. Hedland 19; 12/9 Dampier 22 plus HL2; 13/9 Dampier 18 JA; 14/9 Carnarvon 1 JA plus others on 50 MHz; 15/9 Carnarvon 2 JAs.

During the day the MUF at Broome did not rise above 43-45 MHz until sundown, when the 49.750 TV was heard every day, and the MUF rose very rapidly. TV from Malaysia was heard most nights on 53.750, whilst FM carriers were on 50.540, 50.550 and 50.642 most nights, plus two-way radio signals on 51.950 with American accents.

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A Chinese (?) FM broadcast heard on 52.600 each night. Graham said we may have heard JA pile-ups on SSB, but you haven't heard anything until you hear a similar pile-up on AM. What a mess! The capture effect on an FM pile-up was remarkable to listen to with  $5 \times 9 + 10$  dB signals.

Graham concludes by saying he spent \$591 on accommodation while on holidays so each JA contact cost him \$1.36! I guess that's another way of looking at and justifying expenditure. On that basis my (5LP) trip to VK6 with a caravan three years ago was somewhat more costly when reckoned on the basis of the 10 contacts I had whilst there!

#### ADELAIDE UHF REPEATER

By the time you read this the proposed Adelaide UHF repeater should be at the testing stage as most of the unit is ready now. The licence has not yet been sought, but it is hoped to have it officially on the air early next year.

Possible operating frequencies being 438.525 out, 433.525 in.; 5 watts RF output to some form of gain antenna. It is fully solid state with the metal work being constructed by Tony VK5ASA and the electronics by Mark VK5AVQ.

#### BITS AND PIECES

17/9 Lyall V56BE hearing Australian TV very strong on 51.750 MHz at 2230Z, nothing on 52.19/9 WA4TNV/KL7 5 x 7 on 28.885 0210Z and trying into Eastern States on 52 MHz, also tried from VK5 but no go.

FW8SC active into JA and should be in on December . . . W working into ZL from time to time on 50 MHz . . . 12/9 VK4 hearing ZL TV also heard from VK8GB, same day KL7 to ZL . . . 13/9 KHEQI into VK2 . . . 7/9 report that 4J4LH heard ZL1UHF beacon on 51.022 at 2015Z — only a marginal signal enhanced by meteor showers and received on an FRG7 with a microwave modules converter! . . . Garry VK5AS at Cowell now on 432 MHz . . . VK5ZRO worked VK5AS who was mobile on SSB from Elizabeth to Port Geirne in the mid-north of SA on 2 metres — the 2 metre repeater normally only goes half that distance . . . 20/9 0315 to 0340Z 5 x 9 signals from JA7 and JA8 into VK5 . . . note there is to be a VK-JA 6 metre contact 20/11 to 29/11 and again 20/3/82 to 29/3/82, no other details.

#### GEELONG VHF FIELD WEEKEND

After a bit of prodding I was able to establish that the Geelong Amateur Radio Club proposes holding another VHF Field Weekend on 12/12/81 and 13/12/81 with rules and regulations similar to those last year and published in November 1980 AR. So that the time you might normally spend trying to find last year's copy can be better spent overhauling your portable gear, I herewith reprint the conditions for the weekend.

#### AIM

The Field Day Weekend is being conducted in an effort to encourage VHF/UHF usage and participation in the Ross Hull Memorial Contest, as well as filling the needs for a nationally co-ordinated VHF Field Day Weekend.

#### CONTEST PERIOD

Any continuous 24 hour period within the first 48 hours of the Ross Hull Contest.

#### RULES

All Ross Hull rules apply, plus/except the following:—

Only entries from portable stations will be accepted, however check logs from home stations will be welcome.

A station is deemed portable when it is operated at least 2 km from the home QTH.

No equipment, including antennae, may be set up more than 24 hours prior to the start of the contest.

Power may be derived from any source available.

A scoring contact may be made with the same station on the same band repeatedly providing at least 4 hours elapse between the contacts.

#### SCORING

Scoring as per Ross Hull Contest rules.

#### ENTRIES

Each entry must contain a front sheet giving details of station, including location and total score claimed, plus a photocopy of the log. All entries will be acknowledged and certificates will be awarded to the overall winner, plus the highest score in each call area.

All entries to be sent to the Contest Manager, Geelong Amateur Radio Club, PO Box 520, Geelong 3220, and should be postmarked not later than 13th January, 1982.

It is to be hoped propagation conditions will be better this year as they were very poor last year, even contacts on 2 metres over even average distances were difficult. It is also hoped more stations will make an effort to go out. It is comparatively easy to set up a portable station these days with equipment working off 12 volts if you can rake up a few spare antennae and other bits and pieces. The task increases when you start running higher power with amplifiers for several bands and the other associated equipment for such a set-up, but it can still be fun. Try it!

#### FROM OVERSEAS

Steve VK5AIM sends me some information from "The Short Wave Magazine" and its columns detailing VHF activity, and I note firstly the contact between Mike G3VVF and Abe 4X4IX in Israel at 1605Z on 11/6/81 via E propagation over a distance of 3515 km. G3VVF is in Essex and was the only G station to make a contact suggesting a very selective path.

What is also believed to be a first time contact occurred when G3FPK worked a station in the Spanish, North African enclave of Ceuta around 1615Z on 10/7/81. Several other G stations were in on this one.

Also noted that first 6 to 4 metre contact between ZB2BL and GW3MHW occurred on 3/7/81 about 1640Z. And since 1/7/81 the EI stations no longer have 6 metre permits, and likewise neither do the Italians. In Denmark operators have to obtain a permit to listen on 4 metres!

Reading through the notes Steve sent, my heart went out to G3PBV, who complains of having a hill 200 feet high only 200 yards away. I know the feeling OM! Only my hill is 600 feet high!

#### CONCLUSION

As you may have guessed, overall things on the VHF bands have been rather quiet. There have been the usual JA openings and some Es on 6 metres, very little on 2 metres and 70 cm. However, hopefully October will see some improvements. Closing with the thought of the month: "A man's worst difficulties begin when he is able to do as he likes."

73. The Voice in the Hills. ■

## QSP

**PSST!! AMATEUR RADIO PROFILES MAGAZINE**  
Amateur Radio Profiles (ARP) publishes a quarterly journal that allows no commercial advertisement. The journal provides an in-depth review of amateur equipment. The reports are totally unbiased and they tell it like it is: good or bad. ARP is published by Bill Winkis KC4PE, a member of the Users' International Radio Club. ARP will provide a very valuable service to the amateur community, because it will allow you to read the pros and cons of the various manufacturers' radios so you can make a factual judgement of your purchase. Also, ARP provides a "GBBU Equipment Ratings". The Good, Better, Best and Ultimate dollar values, versus performance and how they compare. Here are some reports on equipment tested.

Reviews of 26 popular Tri-Band antennas, Icom 251A vs. Yaesu 225RD-IC2A, IC260, HF amplifiers, IC-725A, IC-730, KW4-350, etc. The magazine is well written and generally contains 20 pages. Subscriptions are US\$13.00 per year, US\$24.00 for two years. For your subscription write ARP, Box 164, Catoosa, Ga. 31804, USA. Try it, you'll like it! (Surface mail prices quoted) ■

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# HOW'S DX



Ken J. McLachlan VK3AH  
PO Box 39, Mooroolbark 3138

No one can complain, the bands have been good throughout September with outstanding propagation and 10, 15 and 20 metres. Calling CQ, particularly on 10 or 15 metres, resulted in one having to resort to working by call areas to maintain any order and retain his sanity. Trying the country or prefix approach did not deter some Europeans, particularly USSR club operators, from getting out of line. One solution would have been to work split frequency operation, but I personally feel that this is a very selfish approach as more band space is used and the guys on the other end not having an external VFO are disadvantaged. This approach is the only way for a DXpedition to go otherwise no one would have a chance.

Many DX stations were heard and worked, including most of the expeditions on three bands at least.

One of the youngest operators in years but not in experience of handling the pile-ups was 17-year-old Mark A22ZM, who had 2,000 cards to use up in a couple of weeks before QSYing to ZS5-land at the end of September.

A lot of "big guns" could learn a lot by listening to the "little pistols" operating habits, and by using them could increase their DX tally.

## LAZY DXers

A lot of operators unfortunately are becoming net only operators, letting someone else find the DX and bring it to them instead of seeking it themselves, or actually calling CQ. Some operators admit they work nets only. Perhaps this is the undoing of DXing in general and the escalation of sloppy operating techniques, which goes hand in hand with the lethargic attitude "you find it and I will work it".

As a net controller on a couple of bands, I feel that nets have their place on the bands but don't depend on them to work all your new ones that way. You will have more fun and feel a sense of achievement by working the rare ones on your own. If you doubt your own capabilities, don't, and try practising different approaches in DX contests; you will, I am sure, be surprised at the results.

## VACANCY

Whilst on the theme of nets, Percy VK3PA, the anchor-man of the ANZA and Pacific DX net, and a controller for over a decade, has intimated he wishes to retire from these duties in mid-1982.

If you are interested in DX and feel that you can contribute in any way as a controller please phone, write or catch up with Percy on either 21.204 MHz at 5.00 UTC daily, or 14.265 MHz Tuesday and Friday at 6.00 UTC. He would be delighted to hear from you.

## CHINA

As predicted by Vic T12VVR, there was activity from BY in September.

Four members of the Boing Employees' Amateur Radio Society arrived in BY on September 4th for an eight day visit, with two Drake TR7s under their arms, two trapped d'pole antennas, the ARRL film on AR and a few books.

They unexpectedly were allowed to operate a demonstration station to communicate back to Seattle. This historic event took place on September 6th with a QSO between K7LAY/P and W7PMO. This was the first authorized amateur transmission in more than 32 years, and signals were good.

The second demonstration took place between the BEARA group in Shanghai and the Chinese in Beijing — both TR7s being pressed into service. The equipment worked faultlessly (as usual) and the operator in Beijing was Chen Fe Ho, the other operator was Hsu Y.C., ex XU8CH and C1CH many years ago. (Would anyone have a card from this gentleman?)

The Chinese asked the delegation to tell the world that their top government leaders are solidly behind amateur radio and before too long China expects to establish many friends through the media of AR. (For a fuller account, see International News.)

We all sincerely hope to hear the BY prefix on the bands in the foreseeable future.

## DX JOTTINGS

Jacques 3XIZ was active and provided many that missed VK4NIC/3X with the new one, if you were lucky, also QSL to W4FRU.

Congratulations to Philip VK2DPN, who has been notified that his WAZ multi-band certificate is on its way to him and, being endorsed mobile, is the first one ever issued by the Editors of CQ Magazine.

A first for Philip and a first for VK. An article on how you did it would be interesting; how about it, Philip?

Peter FR0CE is very active on all bands both CW and SSB. He operates an 820S linear and quad at 20 metres on 10, 15 and 20, with dipoles at 18 metres for 40 and 80 metres. Unfortunately he has very few VK contacts but is always looking for the Pacific area — if you are successful QSL to DF2OU.

Dave C6ADV operating out of the Bahamas with a nice signal on 15 and 20 metres — using a log periodic beam at 14 metres and the exciter is a Drake TR4. Dave works varying and odd hours, and can be found around the usual DX frequencies on SSB 14.195, 21.295 and 28.695 MHz. QSL route is via N7YL.

Remember Ed W4MGM operating BU5JM, who really looked after the VKs during his recent whirlwind trip through Africa? He is now back home, the direct QSL cards have been honoured and we came by this photo which was snapped whilst he was enjoying an Eyeball QSO with Mike 9XSMH over a beer proving that DXing is not all hard work!



Ed W4MGM and Mike 9XSMH.

## BURMA

XZ9A Laydoh and XZ5A Sanplo still active all bands though have had their share of equipment failures. QSL cards even though adequate IRCs and green stamps have been included for airmail return are being bulk posted to points in most countries for distribution at internal mail rates. This is evidently to get a little more out of the exercise, and some are just going via the Bureau. It is felt that if you send an addressed envelope with IRCs or monetary coverage for the payment by return by airmail, that's the way it should come back, not via other indirect routes to increase the profit percentage but don't blame Sanplo or Laydoh.

## SAN FELIX

Apparently the San Felix DXpedition at the time of writing are having their difficulties with the locals wanting to get into the act. The SVs being unable to obtain reciprocal licences direct or via obtaining a Stateside ticket for the FCC, then an automatic CE licence. On the last reports, early October for a limited period was the word; and the PY0 St. Peter and St. Paul Rocks jaunt being put off until 1982, due to internal difficulties and funds being inadequate.

## CROZET

XYLs becoming QSL managers seems to be catching as George FB8WG on CROZET has enlisted the assistance of his XYL whilst he is on the island for a twelve month tour of duty. As the island has been virtually unoccupied for a number of years, there is a lot of work to be done, and it is anticipated signals should be heard on all bands in early November from the much wanted locale.

George will be using his TS820S and a Triband beam. Up to the time of leaving Paris, he had not acquired an external VFO to make split operation possible, so

the going may be rough though he is a very experienced operator on both CW and SSB.

Logs will be sent by RTTY at regular intervals and the turn around time will be kept to a minimum for QSLs.

If you are successful a card to F2CL should gain you a result. Good luck!

Frank VK9NYG, with his newly acquired external VFO, is getting amongst the DX. 3,200 QSOs was the count to the middle of September and his manager Neil VK6NE is kept on his toes with the requests.

## ILLEGAL OPERATIONS

EL2BA, President of the Liberian Radio Amateur Association, is seeking help to catch illegal operators who use EL calls operating maritime mobile. Only two call signs are licensed to sign MM (EL0AL/MM QSL EL9A and EL0AN QSL RYAA Bureau), the others being illegal. If you have a QSO with a MM station using any other suffix, please try to acquire the name of the vessel and location, make out a normal QSL card with this info on it and forward it through the Bureau. This hopefully will give the Association and the EL authorities evidence which they may use.

## 10LLZ

Always a big signal, always a gentleman, is a conservative way of introducing Luigi 10LLZ to this column. Luigi is well known to VK DXers on 20 metres by either minding a net frequency, chasing up an elusive one for the "gang" to work, or just chatting amongst his many friends.

Luigi in 1939, using the call KA1TLZ from his then QTH of Manila, came second in a world contest — no mean feat considering that a typhoon disrupted power for a considerable time that day.

Now he only needs three countries to have worked the world — those being Burma, China and Karaman Island. If they are to be worked, Luigi will be there with his Collins line, Henry 4K linear, which is fed into a 5 element Telrex monobander at 100 feet. The QTH is a spacious home close to the centre of Rome where Luigi, with his XYL, Bianca, is enjoying his retirement and of course amateur radio.



Luigi 10LLZ.

# Faces Behind the Key and Microphone



H.R.H. Prince Tal Bin Abdel Aziz Al Saud  
Ahmed HZ1TA.

## KNIGHTS OF MALTA

Mario 10MGM has eventually succeeded in getting IADKM "The Knights of Malta", confirmed as a new country by the ARRL effective from the initial QSOs, but please do not submit cards prior to 1/1/1982.

## CW ON THE LOW BANDS —

As heard in the West with Mike VK6HD.

Mike reports that in his opinion the bands have not been very productive in September, but it looks as though he got some "goodies" in his log.

## 160 Metres

KG7, K7CA, VK9XW, W6ANO and W6J1.

## 80 Metres

AH2L, F08DF, FP8AA, F0W0DBK, JT0WA and W1 to W0 call areas plus G, F, OK and ZS.

## 40 METRES

CR9JA, DL2GS/YVS, EA6FD, EA8AK, F08HA, FR7BP/J, HB0ALM, HF0POL, HH2VP, JT0WA, KV4C, OE1ETA/KH8, OE2VEL/KH8 and 6Y5MJ.

## LISTENING AROUND THE CW BANDS WITH ERIC L3-0042

## 160 Metres

W6J1 and many VK2, 3, 5 and 7.

## 80 Metres

VK and ZL only.

## 40 Metres

AH2L, CM7MF, G13QOR, ML1CX, KV4C1, OE1ETA/KH8, YB0VK, YC1BMK/3, ZK2TA, Y9UO, ZF2BN and 4Z2CBM.

## 20 Metres

EA9GD, E18EK, FB8YH, F0GQ/FC, FK0AD, FM0EOM, F0W0BK, H03HC, TF3JO, VP9HM/P, VQ9A, VS6CF, ZK2BGD, 5W1DO, 9M02EG.



A DXer's dream — 9U5JM, 9U5AC, 9L1CA, W4MGN, 9U5WR.

## 15 Metres

AH2L, DL1GK/HB0, EA½KC, F0AHY/FC, FP8AA, IS0JGC, PZ2AA, UJ8JA1, VS6CF, 5W1DK and 5W1DO.

## 10 Metres

CE3ZW, F0W8BK, F0W0BE, HM01, HP1XEK, KA7JGP/KH2, OH0BA, YB0BK, YB0BRT, ZC4YC, ZS6BL1 and 5WDG.

## QSL ROUTES YOU MAY REQUIRE

A7XD — PO Box 4747, Doha, Qatar, Africa.  
A9XDB — PO Box 26180, Bahrain.  
FR0FO — PO Box 200, Tampon, via 97430, France.

HC1MD — PO Box 9100, Quito, Ecuador.  
H13BEA — PO Box 945, Santiago, Dominican Republic.

JAG1AX/JD — PO Box 2, Ogasowara, Tokyo, Japan.

SV0BV/SV9 — PO Box 564, Athens, Greece.  
ZK2BGD — PO Box 37, Alofi, Nive Island, South Pacific.

4W1AB — Box 2434, Sana, Yemen.

## QSL MANAGERS YOU MAY NEED

A7XE — DFANB	JW6XW — LARXW
A9XDA — N4BPF	JY1 — WA3HUP
A9XDE — N4BPF	JY1 — WA3HUP
A222M — ZS5CU	JY8 — ZL1BMU
A71FD — A7XD	KC6BS — JH7LMZ
C11NI — OE2DYL	K6PL/CE0Z — W6ORD
C12JQ — KJ8JAQ	K6SDV — W6BFB
C23LM — EA3BDW	K9SN/VPA — K9MK
C5ADR — DK9KD	K6SAD/K6G — VE5QY
C6ADY — N7YL	KX5ZY — K7TI
CT2DO — W4PKN	OE1ETA — OE2DYL
DL7NS/HB0 — DL7NS	OE1VEL — OE2DYL
DL2VK/ST3 — DF9MF	OK3KM — OZ4KM
EP6BX — EA6CE	OKYJ — WA3HUP
EL5G — K3RB	DF3N/ST2 — DARC
EL6A — K4SE	FH8YL — 18JN
EL9A — K4WSB	FH8YL — 18JN
F9UK1/3A — F9UW	SO3CC — Polish Buro
FB8Y1 — F3KH	SV0AO — KA2FRP
FB8Y1 — F8APU	TL6CR — F6AQO
FQ3/PO/FS — NSRA	TL8WH — W5RJ
FQ3/GO/FS — F6AXX	TU3DP — KC4JR
FH0M — DJ1TC	VP8HM — KQJW
FK8CE — K2RDR	X72AU — WA1ZEZ
FK8DH — DJ82B	Y70RA — YU1EYX
FOOKW — W6RFI	YU7QCC/HB0 — YU7GMN
FR7BY — I501FA	Y23F — YU3TAQ
FRICE — DF2DU	Y3AE — 3AEZE
FW0BF — DJ82B	3BR0B — K60R
G3MUV/CE0 — KA4MGH	4N0RA — YU1ELM
G3POA/SN0 — G3RPO	575AZ — K87HB
G4JVO — GJ2LU	7X4BL — K4CNP
HC7CM — N5BT	722AP — IBVCP
HC2CS — FR4XY	8J3XPO — JARL
HS0JA — JASATG	807BF — JA1ITE
J3AE — J3AEW	9D3DW — 9M02EG
J5AG — 5M3CX	9Q5L — K3FN
J88AQ — W2MIG	9Y4LL — K2QIE

## WHAT'S BEEN HEARD AND WORKED ON SSB IN VK

### 10 Metres

A22ZM, A51PN, CE0AA, CE0ZAD, DL8NU, A22ZM, A51PN, CE0AA, CE0ZAD, DL8NU, EA6AE, EP2TY, F6AYE, G31J, HA8KEY, KX6BU, LA7OT, N6HR/KX6, EA3AE, PA0YJM, SV0BC, T30DB, USSR most areas, W1—W0, XZ9A, ZE, ZS, 3BBAE/3B9, 1V3OSH/5R8, 8P6BX, 9Q5FL.

### 15 Metres

A22ZM, A71AD, CE0ZAD, C6ADV, DF9FM/A22ZM, A71AD, CE0ZAD, C6ADV, DF9FM/ST3, D68AM, EA8XM, EA9JG, F08DP, HS5AID, KC4AAC, M1C, OE8AJK/YK, SU1AA, T30AE, W1—W0, XZ5A, XZ9A, ZB2EO, ZD7HH, ZE1BP, ZS5MG, 3DCS, 4X4DX, 7Q7LW, 8P6BN, 9N1MM, 9L1FC, 9Q5L.

### 20 Metres

A22ZM, A71AD, C21N1, CE0ZAD, DF, DL,

E, F, G, HA, HH, J6LJU, J73PP, LA, MYC, OX3ZM, PA0, S8AAP, T30AB, UK1PG0, VP8AEM, VP8AJL, VP8QG, W1—W0, XZ9A, ZS5Y, 4U1TU, 4U1UN, 4W1AB, 8P6AH, 9Y4LL.

Sincere thanks to VKs 2DXH, 3CIF, L3-0042, VKs 4DK, 6IH, 6HD and 6NE for their contributions and assistance.

Good DX.

73. Ken.

# National EMC Advisory Service

Tony Tregale VK3QQ  
Federal EMC Co-ordinator

## "POT-POUR-RIS"

In these days of rising petrol prices it would be nice to be able to fill the tank each time we key our mobile VHF transmitter. This is what happened with a series of new cars recently — perhaps we should say "The gauge indicated so". The cause — RFI to the (integrated circuit) tank sender unit — the cure was not just screening and filtering! After many hours of searching and bonding, it was discovered that the vertical antenna had been mounted in a double roof area. Bonding the double roof sections together at the base of the vertical cleared 90 per cent of the problem: the final 10 per cent was cleared with ferrote beads and filter capacitors.

Final installation and testing of the communications and electronic equipment was being completed aboard a new navy ship in southern Scotland. Saturday afternoon found most of the yard staff watching the cup final on the wardrobe TV, and many research boffins testing the high power HF transmitters — "Well the two did not mix!". The antenna splitter/amplifier which had been supplied and installed by a very large communications company was found to be "as wide as a barn door". After a quick search of the dockyard dustbins for an old soup can, a temporary HPF was fitted to the input of the splitter/amplifier, avoiding a major walk-out of the yard personnel.

Location: Nato night fighter base, West Germany. Control tower reports intermittent lighting of intercom call light from the transmitter station. The transmitter station was located one mile from the tower, all telephone and control cables were underground and consisted of 14 miles of ring cable, with many outlets and test boxes. An intermittent fault could be on any part of the ring. While awaiting the controller's clearance to inspect the problem, it was noticed that there was something strange about the intermittent nature of the light — "It was sending the station call sign in Morse!". The fault — the HF beacon transmitter had just been re-located and enough RF was being fed down the new telephone cable to light the lamp one mile away. Of course being able to read the code was a great help in locating this problem.

## RFI ALMOST SCUTTLES COVERAGE OF SHUTTLE LANDING

According to the Associated Press, the FCC ordered four field engineers to Edwards Air Force base after it was learned that the equipment used by TV news crews was interfering with communications on frequencies which were to be used by the Columbia space shuttle on landing. The problem was traced to the ENG cameras set up at Edwards. These units use a small transmitter operating in the TV auxiliary bands (1990-2110 MHz and around 2450 MHz) to relay pictures to a nearby control centre. Unfortunately, spurious emissions from the cameras produced interference on the frequencies to be used by Columbia in landing (2200-2290 MHz).

According to James McKinney, Chief, FOB, FCC, everyone co-operated with the Commission, and the problem was quickly traced to at least six of the fourteen ENG cameras on hand. Replacements for the defective units were flown to the landing site and were operational two hours before Columbia landed. Had the problem not been resolved, however, there is little question that network coverage of the landing would have been curtailed.

## TVI FROM SWR INDICATORS AND POWER METER

From the USA comes a report of RFI problems associated with this type of test equipment. It concerns the Daiwa CN-720 and similar SWR indicators/power meters causing TVI when used on the HF bands, especially 10 metres. A spectrum analyser check confirmed the problem with both the CN-720 and the CN-520. The fault was traced to the LED's and associated circuitry. In addition to this problem, we have also found switching diodes and diodes remaining in the signal path in power amplifiers, when the amplifiers are "off", to sometimes be a source of TVI.

A most useful tool in understanding and dealing with all types of RFI problems is the "New Interference Handbook" from the USA. This book is very moderately priced and is excellent value for money — a most useful reference book for any shack. Available from Divisions and MagPubs. ■

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RRL Weekend Projects .....	\$3.70 (150g)
ARRL Antenna Book .....	\$5.70 (510g)
All about Cubical Quads, Orr .....	\$4.60 (150g)
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ARRL VHF Manual .....	\$4.70 (520g)

## INTRUDER WATCH

The new Federal Intruder Watch  
Co-ordinator is

**BOB McKERNAN VK4LG**  
P.O. Box 50  
Sandgate, Queensland 4017

# ANZA Net Co-ordinates Vessel in Distress

Ken MacLachlan VK3AH

Whilst controlling the 21.204 MHz ANZA net in late September, Frank HT1KD called for assistance with a distress call he had received on 14 MHz regarding a vessel afloat in the Pacific.

Alerting the Commonwealth Government Marine Search and Rescue Authority, reverse charges was accomplished within one minute, and before Frank had finished his original transmission. Precise information as to the vessel's co-ordinates, name, number of people on board, the hazard and its magnitude were in possession of the Coast Guard at Honolulu within minutes, who acted promptly by dispatching a search plane to the area immediately.

With the land-line still open to Canberra we QSYed to the 14 MHz frequency, where the signal from the vessel was strength 9. The YL operator had stated that she was using a FT200 connected to a battery. Shortly afterwards in a very tense and frightened voice, she announced that 75 per cent of the vessel was afloat and they couldn't get to the lifeboat but were abandoning ship in a heavy storm with high seas.

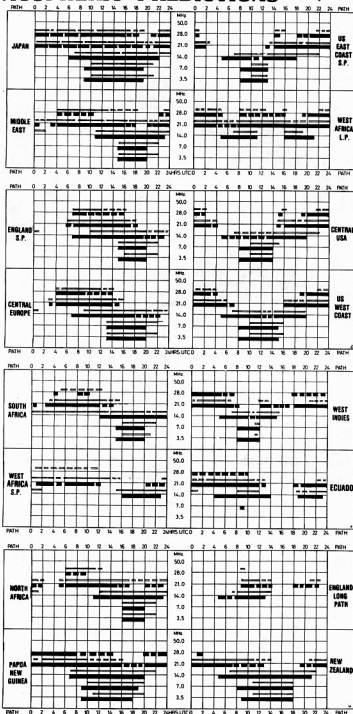
The 65 ft. vessel "Sun River", with a compliment of 18, last known position 164° 24' 16" W and 18° 11' 21" N may unfortunately never be heard of again, but as amateurs we know that a service has been provided and everything in our power was done to assist these poor unfortunate people, even through deliberate QRM on a frequency publicised as handling emergency traffic.

All operators should read page 4 AR September 1981, and get all details (including the registry of the vessel; this we did not get as it would have saved problems that occurred later), and if not directly involved refrain from comments on frequency and leave it to the original station who took the call. That station probably has better propagation and a fuller understanding of the problem as he has with the emergency since its inception. Help by all means, if you are asked. We suggest to some operators that they refresh their memory by reading the regulations.

My sincere thanks to the gentlemen at the Centre in Canberra for their courtesy, help, advice and understanding, the Coast Guard Radio Room at Honolulu, radio amateurs HT1KD, ZL1BOQ, N6DKP, KH6ML and others who I might have missed.

Ken VK3AH.

## IONOSPHERIC PREDICTIONS Len Poynter VK3BYE



Join a NEW MEMBER NOW!

# EDUCATION NOTES

Brenda Edmonds VK3KT

Congratulations to all those who passed the various sections in the August exams. It was good to hear all the new call signs appearing in a rush in September. Commiserations and better luck next time to those who didn't quite make it, and of course good wishes to those about to attempt the November ordeal.

Perhaps this is an appropriate time for a few words about examinations, in reply to some of the disgruntled comments that have been heard.

Firstly and most importantly — the onus is on the candidate to record his answers on the answer sheet, and to fill in the details on the top of the sheet. In one recent examination four answer sheets were found to be totally blank except for the name, etc., at the top. Later it was found that four question booklets had selected answers marked, but there was no way these could be identified to any of the unmarked sheets. So four people who may have been quite confident scored zero.

The present system involves hand marking of all answer sheets — but the marker cannot be expected to know where you intended to put the circle if you did not put it round the right letter. If you circle

alternatives A and C in question 37, and no alternative for question 38, that's two wrong even if C for 37 and A for 38 are correct. The answer sheets do require care in filling them in, especially if you don't work steadily through from 1 to 50. This is partly examination technique, I know. Some people need more practice with it than others.

There is no predetermined number of candidates allowed to pass. We are now receiving statistics from DOC after each exam (see recent ARs). The pass rate range between States agrees fairly well with the overall average of 35-40 per cent for AOCF for over twenty years. Novice rates are slightly higher than AOCF.

With regard to marks obtained, we all hear of the numbers of candidates who achieve 66 or 68 per cent, but remember that these are the more vocal ones, usually. The 50s and 58s do not make so much impression. DOC has produced statistics showing the number of candidates on each score for the November 1979 Novice and February 1980 AOCF exams. The numbers of candidates were approximately 1400 and 1100 respectively. At Novice level, 25.63 per cent of candidates scored 60-68 per

cent, and 27.89 per cent scored 70-78 per cent, 5.11 per cent exactly on 70 per cent. For the AOCF the figures are 60-68 per cent, 26.27 per cent; 70-78 per cent, 18.09 per cent; 80 per cent exactly, 4.09 per cent.

The graphs show up as a standard distribution curve. All these statistics can be obtained from Divisional Federal Councilors or from me if details are required.

If you have any complaints about examinations, please do let me know.

If you would like to write some questions, I will be glad to receive them, either for use in trial papers or to pass on to DOC for use.

My first trial Novice paper is available now from the WIA Executive Office. I also have a supply of sample Morse tapes which I can copy for you if you send me a blank tape.

Once again, please send me any ideas or comments on education matters, or join me on 3685 kHz at 2200 EST on Wednesday evenings.

73. Brenda VK3KT.

**The WIA is in business for more members. Please help.**

## SIDEBAND ELECTRONICS ENGINEERING

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1 WAHROONGA ROAD, SPRINGWOOD

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TET HB-35C 10, 15 20m 5 el log/yagi 13 ft. boom	\$415
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Hy-Gain 411 yagi, 10m 5 el, 17 ft. boom	\$115
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RG8/u quality coax cable, 50 ohm, per metre	\$1.25
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# CONTESTS

Reg Dwyer VK1BR  
PO Box 236, Jamison 2614

## NOVEMBER

8 & 22 CZECHOSLOVAKIAN  
PHONE/CW FCM

14/15 EUROPEAN RTTY  
21/22 VK QRP CW/THE WORLD

AR 10/81

21/22 ARRL PHONE SWEEPSTAKES  
CQ

28/29 CQ WWDX CW

## DECEMBER

5 Dec. 81  
10 Jan. 82 ROSS HULL VHF AR 10/81

12/13 ARRL 10m CQ  
JANUARY

1982 —  
10 COMPLETION OF ROSS HULL  
VHF TEST

9/10 1ST ANNUAL 40 AND 80 METRE  
PHONE 73 Mag./AR

23/24 WHITE ROSE 2ND SWL LF  
AR/FCM

## 1ST ANNUAL 40 AND 80 METRE CONTEST

Exchanges:  
RS report plus DX country (to US stations).

Rules:  
From 0000Z January 9 to 2400Z January 9  
for 40 metre event.

From 0000Z January 10 to 2400Z January  
10 for 80 metre event.

Categories: Single operators may work a  
total of 16 hours on each band. Off  
periods must be not less than 30  
minutes each. Multi-operators may work  
24 hours on each band. Off periods must  
be not less than 30 minutes each.

Entries:  
Single operator: 40 metre band only, 80  
metre band only.

Multi-operator: 40 and 80 metre bands.

Exchange:  
RS report plus DX country.

Points:  
1 point per QSO band with Continental, US  
and Canada or within your own country.

All other contacts are 2 points each on  
each band. All contacts between 1000 and  
1400 local time count double.

Multipliers:  
1 multiplier point is earned for each US  
State (48 tot.), each Canadian Province  
(12 tot.) or DX country worked per band.

Logs:  
For each band with SASE to Whidbey  
Island DX Club, 2665 North Busby Road,  
Oak Harbour, Washington 98277.

Entries dated after 11th February, 1982,  
will not be eligible for consideration.

THE WHITE ROSE RADIO SOCIETY  
2ND SWL LF BANDS CONTEST

Date:  
From 1200 GMT 23 January, 1982 to 1200  
GMT 2 January, 1982. 18 consecutive  
hours of operation allowed.

Entries:  
Phone or CW only. No mixed modes.

Bands:  
1.8, 3.5, 7 MHz bands.

Logging:  
The practice of logging a series of con-  
tacts made by one station will be de-  
preciated.

Logs are not to have more than 10 con-  
tacts by the same station on each band.

Score:  
1 point per station on your own contin-  
ent, 5 points per contact outside your  
own continent.

Total points to be multiplied by the num-  
ber of different countries heard on each  
band added together.

Logs:  
To show date, time GMT, station heard,  
station worked, report at SWL QTH.

Points can be claimed for station heard.  
If both stations are claimed then both calls  
must be shown in the station heard column.

Entries:  
To Contest Manager,  
Mr. David McGregor G4IDJ,  
C/o White Rose Radio Society,  
8 Manor Court, Shadwell,  
Leeds LS17 8JE, UK.

Post:  
Logs must arrive before 16th March, 1982.  
(Comments on contest appreciated.)

COMMENT  
Many thanks to those of you who did take  
the trouble to reply with your comments  
on both the John Moyle and the RD Con-  
test.

The results of the RD Contest are well  
under way at the time of submission of  
this column and we should see the final  
results within the next issue or so.

All the best for now,  
Reg VK1BR.

Other Pacific area results:—  
12. ZL2BR 3848 46. 9V1TL 1690  
22. ZL1HV 2758 81. ZL1TL 650  
24. ZSOAT 2690 93. VS6RJ 450  
35. ZP2SE 2110

Single band entries among the above were:—  
7 MHz — VK3APN, Overseas leader.  
14 MHz — VK6RU, Overseas leader.

21 MHz VK3ABA.  
28 MHz — VK8BA, Overseas leader, VK4SF.

The four man team contest between States  
resulted:—  
VK3 10073 VK7 7098  
VK2 9407 VK5 3250

Insufficient logs were submitted from other States  
to qualify as teams.

AUSTRALIAN AWARDS  
The Gold Medal for the leading VK entrant —  
Russ Coleston VK4XA.

The Silver Medal for the leading State team —  
Ivan Stanford VK3XB, Andy Donjan VK3AEW, Eric  
Ferguson VK3KF, John Tutton VK3ZC.

The Bronze Medal for the middle placed VK  
entrant — P. Van Louwensen VK2DBL.

HOW THE LEADERS MADE THEIR SCORES  
QSOs/Bonus areas per band 80 to 10:

VE5OU	9/9	53/29	229/54	160/40	30/26
G3F3B	11/11	47/31	116/59	72/50	34/26
VE5RA	4/4	42/48	186/55	135/38	23/22
VK4XA	23/14	16/11	178/52	80/35	40/25
VK2BPN	18/12	32/18	126/49	78/35	38/25
VK3XB	13/10	6/6	93/33	88/38	13/13

Equipment used by the two top VE stations makes  
interesting reading:—  
VE5OU: T4XB/MLA2500, R4B 3.5 MHz dipole/delta  
loop, 7 MHz dipole, 14 MHz 3 el., 14 MHz 4 el.,  
28 MHz 5 el., CL36.

VE5RA: T4XC/SB220, R4C, 3.5 MHz inv-V, 7  
MHz 4 el. yagi, 14 MHz 4 over 4 el. yagi, 21 MHz  
6 over 6 el. yagi, 28 MHz 5 over 5 el. yagi.

RSGB COMMENTS  
"First time in all the years I've been operating that  
I have taken part in 'BERU'. If they've all been  
1980, then I'm sorry I've missed them."—G3HAL.

The unique character of this contest is again  
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tion of somewhat indifferent conditions and rather  
poor publicity in Canada reduced the overall entry  
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Heading the table this year is John Sluymers  
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many years.

The leaders were:—			
1. VEGOU	5436	4. G3FPO	4438
2. G3F3B	4885	5. VK4XA	4365
3. VE5RA	4794	6. G3MXJ	4181

RECEIVING SECTION			
3. Eric Trebilcock	BCRS195	.....	2245

AUSTRALIAN SCORES			
5. VK4XA	4365	60. VK6RU	1228
8. VK2BPN	4129	62. VK1UD	1075
18. VK7BC	3208	63. VK8HA	1009
20. VK3XB	3065	65. VK3AUQ	955
23. VK3AEW	2705	67. VK3BDH	935
25. VK2GW	2545	69. VK3CG	925
29. VK3KF	2180	70. VK5FG	915
33. VK3ZC	2123	72. VK3KE	905
40. VK6FS	1880	73. VK3APN	845
41. VK3CM	1775	76. VK7GB	785
42. VK3YD	1765	86. VK2H	575
45. VK7RY	1695	87. VK4SF	555
46. VK3YK	1625	90. VK5DL	480
48. VK3RJ	1565	91. VK5HC	470
51. VK2DBL	1463	92. VK3YL	450
53. VK7CH	1410	95. VK1BR	400
55. VK5BO	1385	96. VK2DKU	365
56. VK3BKU	1370	98. VK3NLA	320
57. VK1CG	1345	99. VK5NLC	275
58. VK2DBL	1270		

Other Pacific area results:—			
12. ZL2BR	3848	46. 9V1TL	1690
22. ZL1HV	2758	81. ZL1TL	650
24. ZSOAT	2690	93. VS6RJ	450
35. ZP2SE	2110		

Single band entries among the above were:—  
7 MHz — VK3APN, Overseas leader.  
14 MHz — VK6RU, Overseas leader.  
21 MHz VK3ABA.  
28 MHz — VK8BA, Overseas leader, VK4SF.

The four man team contest between States  
resulted:—  
VK3 10073 VK7 7098  
VK2 9407 VK5 3250

Insufficient logs were submitted from other States  
to qualify as teams.

AUSTRALIAN AWARDS  
The Gold Medal for the leading VK entrant —  
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The Silver Medal for the leading State team —  
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# hy-gain

## NEW Extended Double Zepp Antenna Design

The Hy-Gain V2 is 2-meter extended double zepp vertical consisting of two stacked 5/8 waves properly decoupled to allow no RF on the coax feedline. Coax connects to the decoupler inside the antenna for complete weatherproofing. Mechanically, the V2 has no equal. It's easy to assemble and all elements are corrosion resistant 6063-T832 aluminum with rustproof hardware. The V2 is a complete antenna that's ready to mount on any mast up to 2" (50.8 mm) in diameter.

Two sets of 1/4 wave radials and a centered feedpoint put the radiation at the horizon, not the sky! The V2 and two competitors were measured for radiation efficiency on a ground-reflection-range, which was designed according to IEEE standard 149-1979, and the results shown below were conclusive.

Hy-Gain V2

Brand C ARX-28

Brand A AEA-144



Designed to operate from 138 MHz through 174 MHz, the V2 obtains a VSWR of less than 1.5:1 at resonance and has a 2:1 VSWR bandwidth of at least 7 MHz. The antenna's isolation from the support mast is 20 dB minimum.

The new V2 will equal or surpass the electrical performance of any competitive two stacked 5/8 wave antenna, regardless of gains claimed or your money back. Money-back limited to 30 days. If not satisfied, return to place of purchase.

**TELEX hy-gain**

AUDIO TELEX COMMUNICATIONS PTY. LTD.

MELBOURNE — Tel. 277 5311, 7 Essex Road, Mount Waverley 3149

BRISBANE — 52 1312  
42 Commercial Road, Fortitude Valley 4006

SYDNEY — 633 4344  
4 Little Street, Parramatta 2150

The varied band conditions put Russ Coleston VK4XA in sight of the leaders in overall fifth place and leading the Australian representation with 337 QSOs and 137 bonuses.

It is a pleasure to see increased participation in the receiving section this year. Top honours and the Receiving Rose Bowl go to Ron Thomas BR515822. In second place is a newcomer, as far as recent years are concerned, C. Bradbury BR51066, although he mentions that he did participate in 1936 and 1939! Another listener who has experience of "BERU" operations over many years is Eric Trebilcock BCR5195, of Melbourne, whose 40th entry in this contest puts him in third place.

Bonus points on the lower frequency bands were somewhat scarce. On 3.5 MHz the leading UK stations managed to find VE1, 2, 3, VO, VPS, 9H1, ZB2, 5N and CS, but there was no sign of ZL or VK this year. Western Canada and Oceania were limited to semi-local contacts on this band and there was no evidence of trans-Pacific openings.

7 MHz conditions were average, though not up to the levels of recent years. Most G stations worked the few exotic prefixes in Africa and the Caribbean without too much difficulty and the long path opening to VK/ZL was reasonable, although somewhat hard going, as the skip shortened and European signals built up in strength.

14 and 21 MHz carried the bulk of QSO traffic as would be expected. The short path from Europe to VK in the first 6 h. of the contest provided plenty of bonus points on both bands, with the opportunity to fill in any gaps next morning on the long path. 21 MHz appears to have remained active in Eastern Australia until about 2 a.m. local time on the short path, and European stations needed to keep an ear on this band to catch the sporadic long path openings which persisted throughout their night. However in VE the band seems to have closed fairly early with no "small hours" activity.

28 MHz was the disappointment this year. After very good conditions in recent events, scores were well down. Marginal openings to VK and VE from Europe provided some bonus points but were not sustained long enough to build up any significant number of contacts. Conditions were a little better in the southern hemisphere and VK8HA remarked that from his location this band was open during virtually the whole of the contest period.

The Australian entry accounts for almost 40 per cent of the tabulation and this is due in no small part of the efforts of John Tutton VK3ZC and Eric Trebilcock BCR5195, who for many years have undertaken "BERU" publicity for VK. The committee acknowledges their continued help with grateful thanks. We hope that a similar situation can be established for Canada and New Zealand.

BERU 1982

1200Z, 13th March to 1200Z 14th March. Rules in February AR.

**WIA**

Australian Radio Amateur

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1981/1982

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Communication Computer

- ★ Fully self-contained with built-in green screen, monitor and keyboard
- ★ Automatic (or manual) transmit/receive switching of transceiver
- ★ Fully portable - 12-14 V dc (1.5amp)
- ★ 323 w x 276 d x 127 h (mm) in size
- ★ Visual display in both transmit and receive
- ★ Optional printer (240 V ac) available
- ★ CW • RTTY • ASCII communications
- ★ Shortwave listeners receive only unit available - CWR-670
- ★ Similar keyboard layout as a standard typewriter with function keys

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**VIC-20**  
IS  
COMING  
TO  
**CW**  
THE REVOLUTION  
IS NEAR!



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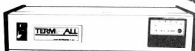
CW Electronics

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Brian Beaman VK4 AHD



### THE ALL NEW! **TERMINAL**

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Turn your computer into a total CW, RTTY, ASCII  
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system that links computer and transceiver.

- ★ Computer Interface
- ★ RTTY Demodulator
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- ★ Hardware clock



## Introducing **MIRAGE** Communications Equipment

AS REVIEWED IN AR, MAY 1980

### FEATURES:

- Built-in Receive Preamp
- Adjustable delay for SSB
- Remote control operation with optional RS-1 Remote Head
- 1 to 2 Watts in — 15 to 30 Watts out — Excellent for HTs
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Frequency Range	144 to 148 MHz
RF Power In	200 mw to 15 Watts
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Modes	SSB, FM and CW
Receive Preamp	10 db gain min. 2.5 db $\pm$ .5 db noise figure
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**WARRANTY ON ALL MIRAGE PRODUCTS 5 YEARS**  
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### B108 2 METER AMPLIFIER 10W IN — 80W OUT



Amateur  
Net **\$249**

DUAL PURPOSE — H.T.s or Transceivers

B 23	2 Metre Amplifier	2 W in, 30 W out	\$119
B 1016	2 Metre Amplifier	10 W in, 160 W out	\$369
B 3016	2 Metre Amplifier	30 W in, 160 W out	\$309

Average and Peak Reading Wattmeter/SWR		
Model MP1	HF	\$165
Model MP2	VHF	\$165

## ATV ANTENNAS

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# AROUND THE TRADE

## YAESU'S NEW SUPER TRANSCEIVER: FT-ONE

The FT-ONE is a top of the line general coverage transceiver with a completely new design. Controlled by a microprocessor, the FT-ONE allows the complex operations today's amateur demands. All of the up-to-date convenient features are built-in, teamed with the FT-ONE's super high performance circuitry.

### Wide Dynamic Range

The receiver front end utilizes a push-pull amplifier, consisting of two low noise power transistors and a high-intercept diode balanced mixer, providing a wide dynamic receiving range of more than 95 dB through the coverage.

### Frequency Controls

The keyboard, UP/DOWN switches and main dial allow you to tune to any frequency within the 150 kHz-30 MHz range continuously, with resolution to 10 Hz. The full operating range can be searched, using the scanning control (UP/DOWN controls and keyboard entry resolution to 100 Hz). If you wish, you can stop the scanner on any frequency where a signal is present, in order to check the signal and band condition.

### Convenient Filtering System

The filters in both the receiver and transmitter sections are 8 pole crystal filters. In the receiver section, the filtering system provides continuously variable bandwidth from 300 to 2400 Hz. Furthermore, the centre frequency of the filter can be adjusted to any desired point using the IF shift control for a solid copy of a signal on a crowded band. Also, the audio peak filter rejects unwanted high pitched carriers within the passband.

### 10 VFO System

The FT-ONE includes 10 VFOs for various frequency operations, allowing you to return to a desired VFO frequency, in the same manner as when using the memory function of earlier equipment. The Tx and Rx VFO selector lets you choose the desired VFO for both Tx and Rx, allowing split operation on any frequency within the coverage.

### Full Break-In

The Full Break-In feature is most convenient for CW operators, providing a monitoring call-back feature during your CQ calls. Between each dot or dash the transceiver returns to the receive condition, allowing you to monitor your frequency.

### General Coverage

The FT-ONE comes equipped for full band coverage from 150 kHz to 30 MHz continuously without band switch selection, so you can check the band condition of broadcasting stations operating on non-amateur bands (transmission on non-

amateur bands is prohibited by the circuits).

### Reliable Power Supply

The FT-ONE is equipped with a compact switching voltage regulator, which provides a stable voltage to both receiver and transmitter sections with high efficiency.

### Convenient Features

Various convenient features such as VOX, speech processor, AMGC, variable threshold noise blanker, audio peak filter, notch filter, etc., are built-in features of the FT-ONE.

### Specifications

Frequency coverage: Rx, 150 kHz-29.999 MHz; Tx, 1.8 MHz-29.999 MHz. Modes: LSB, USB, CW, FSK, AM, FM. Case size: 370 (W) x 157 (H) x 350 (D) mm. Weight: Approx. 17 kg. Power requirements: 100/117/200/220/234V AC; 13.5V DC. Power consumption: Power switched off for memory back-up — 3.5 VA (at AC); 0.95W (at DC); Tx, 560 VA (at AC); 270W (at DC); Rx, 90 VA (at AC); 36W (at DC).

### Transmitter

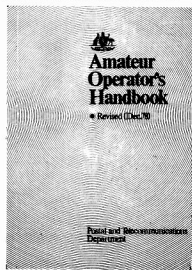
Carrier suppression: Better than 40 dB. Unwanted sideband suppression: Better than 40 dB. Spurious radiation: Better than 40 dB. Frequency response: 350-2700 Hz at 6 dB down. 3rd order IMD product: Better than —31 dB. RF output impedance: 50 ohms. Microphone impedance: low — 500-600 ohms.

### Receiver

Sensitivity: 3  $\mu$ V for 150 kHz to 1.7999 MHz (SSB). 10 dB S/N: 0.25  $\mu$ V for 1.8 MHz to 29.999 MHz. Selectivity: SSB, —6 dB at 2.4 kHz; —60 dB at 4.0 kHz; CWN, —6 dB at 600 Hz; —60 dB at 1.3 kHz; CWN, —6 dB at 300 Hz; —60 dB at 900 Hz; AM, —6 dB at 6 kHz; —60 dB at 11 kHz.

The FT-ONE will be available from Bail Electronic Services, 38 Faithful Street, Wangaratta 3677, Tel. (057) 21 6260, from about November 1981. ■

## AMATEUR OPERATOR'S HANDBOOK



A must for every amateur radio enthusiast!

The Amateur Operator's Handbook, Cat. No. B 5042, outlines the regulations and conditions for the operating of amateur radio.

About one-third of the exam for Amateur Operators' Certificates of Proficiency (AOCP) is based on regulations, therefore the B 5042 is essential reading for anyone interested in becoming an amateur operator.

This handbook is the all-new updated version, including changes in the service since the previous version.

The handbook was previously only available from Government Publications, but Dick Smith has made a special purchase as a service to amateurs and aspiring amateurs. Now the Amateur Operator's Handbook is available for \$3.60 from all Dick Smith Electronics stores. ■

## MAGAZINE REVIEW

Roy Hartkopf VK3AOH

(G) General. (C) Construct. (P) Practical without detailed constructional information. (T) Theoretical. (N) Of particular interest to the Novice.

### RADIO COMMUNICATION August 1981

Tropospheric Scatter Propagation (G).

### CQ-TV No. 114

Colour Vision Mixing (P).

### CQ July 1981

Special Antenna Issue.

### CQ June 1981

SSB Monitorscope (P). Navassa Island DX (G). 432 MHz Satellite Antenna (C).

### 73 September 1981

Easter Island DX (G). The Deaf and Deaf-Blind Communication (G).

### QST May 1981

Coherent CW (G). Coax Cable Antenna Traps (P).

### QST June 1981

Coherent CW (P). ■

## QSP

### MARINE RESCUE

The American ketch "Ketch-up" ran aground and later sank in heavy seas on a reef about 250 km west of Port Moresby whilst heading for Daru via Daru. A Mayday call, according to a report, was heard by VK8DY who alerted the Coastal Surveillance Centre in Canberra. When the exact position was confirmed PNG authorities were informed and sent out a patrol boat which rescued the retired Doctor of Los Angeles, the skipper-owner, and the other five people aboard. ■

### CHURCHILL FELLOWSHIP

The Churchill Trust will soon be calling for applications from Australia of 18 years and over who wish to be considered for Churchill Fellowships tenable in 1983. Details and application forms may be obtained from The Winston Churchill Memorial Trust (M), PO Box 478, Canberra, ACT 2601. The aim of the Trust is to give opportunity, by the provision of financial support, to enable Australians (whether qualified or not in any specialty) to undertake overseas study or an investigative project of a kind not fully available in Australia. 59 Fellowships tenable in 1982 were announced earlier this year at a total cost of \$450,000. ■

## SPOTLIGHT ON SWLing

Robin Harwood VK7RH

5 Helen St., Launceston, Tasmania 7250



Recently, Radio Netherland's experimental transmissions of computer programmes via shortwave came unstuck. Unfortunately, as far as enthusiasts in North America and the South Pacific found out, somewhere along the route from the studios in Hilversum and the relay bases in Bonaire, Netherlands Antilles and Madagascar, the computer and audio became fouled up. Those able to copy the European transmitters in Lopik, were more fortunate in copying the signals, especially the TRS 80 and Pet Commodore programmes. Because the APPLE system utilizes a higher baud rate, nobody was able to obtain a printout of the programme.

Various suggestions have been advanced as to why the computer signal failed to enter in. However, the effects of multi-path propagation could have been significant factors as evidenced by similar effects on slow-scan TV signals. Radio Netherlands has also stated that it will be continuing experimental computer programme transmissions.

One way of overcoming the problems encountered so far could be that the signal be transmitted at half speed on a reel to reel recorder, and fed into the computer at normal speed, taking twice as long as at present to feed the programme. It must be borne in mind that these computer freaks are a very small minority of the total listening audience, and the majority do prefer to hear more relaxing sounds than the discordant tones and noises of computer audio.

This is the second experimental transmission by a major international broadcaster during the past 18 months, for it was during the middle of last year that Kol Israel in Jerusalem conducted tests with SSTV (slow-scan). Unfortunately the images were rather poor, because of multi-path distortion. Added to this the number of those capable of receiving SSTV are very small indeed, and it is surmised that Kol Israel has abandoned these transmissions for the present as not being feasible.

I notice that Voices, the magazine about shortwave programmes, has re-appeared after a hiatus of nine months. It was widely believed to have ceased publication, due to problems with sponsorship and adver-

tising. However, it is now being issued in a quarterly format, and those initial subscribers who paid earlier will have their subscription extended to when payment runs out, which could be up to two years extension. It could conceivably encounter problems, so I would caution those contemplating taking out subscriptions. I do recommend the Review of International Broadcasting edited by Glenn Hauser of Knoxville, Tennessee. This reviews programmes of the various international stations, and has been published for many years now.

During the last week of September it really became confusing, for on the 27th Europe reverted back to Standard Time, which meant many transmissions beamed to Europe were aired one hour later than previously. Compounding this, the USSR instituted their half-yearly frequency alterations and I am reliably informed that up to 50 per cent of the frequencies will be changing. This means a big headache for the frequency management personnel at the major international stations, who will put in many hours of overtime keeping abreast of the changes, and altering channels where necessary. I am at a loss to understand why the USSR does not change in line with the rest of the world on the first Sundays in March, June, September and December.

A number of broadcasters now have a communications type magazine programme with a wide variety of information for enthusiasts. The trend away from purely "DX" formats, while regretted by some, nevertheless is more attuned to the realities of interest amongst the listening audience. As international broadcasters don't exclusively cater for the random DXer, generally the DXers being too busy chasing signals than listening to ordinary programmes.

Several of these programmes are worth listening to, namely Med a Network on Radio Netherlands. This is possibly the best of these, with regular weekly news. The recently revamped HCJB's DX partyline does contain some useful information from time to time. It is of interest to note that many are very similar in format to the BBC World Service Radio Club, which had its demise at the end of last year.

Our Radio Australia has recently commenced a monthly communications magazine called "Spectrum". Hosted by Dick Speckman, it can be heard on the first Sundays of the month at 0612 and 1212, as well as other times during that day.

Well, that is all for this month. Until next month, when we will be reviewing 1981 in retrospect, the best of DXings and 73.

BUYING OR SELLING GEAR?

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MAKE IT HAPPEN FAST

## CLOSE-UP

### THE ONLY AMATEUR IN COOPER PEDY — VK5NKM — HAS UNIQUE QTH

The front cover picture shows Kathy Marsh VK5NKM in her shack at Cooper Pedy, the opal-mining town in the central South Australia about 800 km north-west of Adelaide. Not only is Kathy the only amateur in the town, but probably the only one in Australia whose house is about 6 metres underground.

Many of the 7,000 inhabitants of the isolated but fast-growing mining centre live in these so-called "dugouts" to avoid the surface temperatures which in summer approach 50 degrees Celsius for months on end. Dugouts are also warmer in winter, and many are quite palatial in their dimensions and furnishings. Kathy and her husband, Lester, have spent most of their time since arriving from Victoria some years ago in enlarging and improving the former opal mine which is now an impressive home.

Kathy prefers the 80 metre band but, as the second photo shows, has quite an antenna farm on the hilltop above the dug-out, and has operated a good deal on 15 and 10 metres as well. She is the deputy matron of the Cooper Pedy Hospital and also local controller for the State Emergency Service, so not surprisingly doesn't often have time to get on the air these days!



Photos: Ron Fisher VK3OM, Bill Rice VK3ABP.

## CALL BOOK DATA REMINDER

The Editor is aware that there are still a small number of errors, duplications and omissions as well as uncorrected addresses in the current edition.

The data in the Call Book is only as accurate and complete as the information supplied to the Institute.

PLEASE tell us about any errors, etc., and please tell your amateur friends to tell us too. Write to —

**WIA**  
Box 150, Toorak, Vic. 3142

# AMSAT AUSTRALIA



R. C. Arnold VK3ZBB

Charles Robinson VK3ACR has been appointed AMSAT-Australia Co-ordinator by the Federal Executive of WIA following the resignation of David Hull VK3ZDH.

As mentioned on several occasions in these notes, David has received little co-operation from AMSAT in recent years despite his sterling service to the organisation in the early 1970s. I hope Charlie may be able to get Washington to realise that there is still an enthusiastic group of satellite operators in this country.

Sincere thanks to David for his past service as Co-ordinator and Command Station Controller, and best wishes to Charlie in his new role.

I shall continue to act as Publicity Officer.

I have received a copy of the UOSAT Technical Handbook. The handbook is in loose leaf form and will be amended and expanded as required in the future. The handbook is copyright and only available to members of AMSAT-UK, but I hope that we may be able to obtain permission to reprint a part or the whole of the text in "Amateur Radio".

Meanwhile if you require this most informative publication I suggest you become a member of AMSAT-UK and receive your own copy, together with other authoritative satellite information. Membership is a minimum of £E4 per annum, but I suggest you send £10 to cover postage costs by airmail. The Secretary/Treasurer of AMSAT-UK is:—

R. J. C. Broadbent G3AAJ,  
94 Herongate Road,  
Wanstead Park,  
London, E12 5EQ.

Predictions for AMSAT OSCARS 7 and 8 for November, 1981, are:—

NOVEMBER							
OSCAR 7		Orb.		OSCAR 8		Orb.	
Date	No.	Eqx	°W	Date	No.	Eqx	°W
1	31832	0028	90	1	18644	0039	75
8	31820	0103	98	8	18742	0111	83
15	32008	0138	107	15	18840	0000	66
22	32095	0018	88	22	18938	0032	74
29	32183	0053	96	29	19036	0104	82

I am now in a position to supply basic orbital elements for OSCARS 7 and 8, and, I hope, for UOSAT and Phase IIIB in due course.

These elements are described in an article by Tom Clark W3IWI in "Orbit" magazine, March/April 1981, and will probably be the only form of prediction for future satellites. This data is sent to me each time the satellites show a significant shift in parameters — for OSCAR 7 this is every month or so, for OSCAR 8 the figures change every week or ten days. If you would like these figures on a regular basis send me a supply (say 10) of self-addressed, stamped envelopes and I will pass them on to you each time I receive them.

The latest sets of elements available at time of writing are:—

	OSCAR 8	OSCAR 7
Epoch	To 263.5373404	250.4230546
Inclination	Io 98.8106	101.482
Rt Asc	Co 295.3972	264.9503
Eccentricity	Ec 0.0005706	0.001914
Argument of Perigee	Wc 280.2486	68.8858
Mean Anomaly	Mo 79.8157	291.3533
Mean Motion	Mo 13.96298956	12.53360433
Orbit No.	Ko 18066	31167

Tom Clark's article includes a programme written in North Star BASIC suitable for many of the popular home computers. I hope the article can be reprinted in AR to give guidance to those wishing to compute their own orbital data. (Note: The article is too long for this issue but it is hoped to reprint it soon.—Ed.)

As these notes were being prepared the launch of UOSAT was again deferred to early October. I hope there will be news of a successful launch for the next edition.

Preliminary orbit characteristics, assuming a normal launch are:—

Period: 95.504 min.  
Height: 560 km.  
Inclination: 97.48°.  
Increment: 23.95° W/orbit.  
Max. O/H pass: 12 min. 20 sec.

This information will be updated after launch. Please note that the 10 GHz antenna is to be LH circular. ■

## EMC (ELECTROMAGNETIC COMPATIBILITY)

If radio frequency interference is causing you a problem you are reminded that — "Advice on all types and aspects of interference (PLI, TVI, AFI, etc.) is available from the National EMC Advisory Service".

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VK3QQ,  
Federal EMC Co-ordinator, QTHR.

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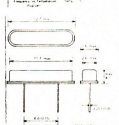
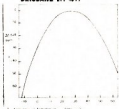
- Nominal Frequency 32.768 KHz
- Frequency Tolerance  $\pm 30 \text{ ppm}/28^\circ + 1^\circ\text{C}$
- Drive Level 1uW max
- Series Resistance 31.0 uOhms max
- Q Factor 40,000 min
- Parabolic Curvature Constant Less than  $-0.04 \text{ ppm}/^\circ\text{C}$   
(Refer Fig. 1)
- Turnover Temperature  $28.0^\circ\text{C} \pm 5^\circ\text{C}$
- Capacitance Ratio 700 max
- Storage Temperature Range  $-30^\circ\text{C} \pm 80^\circ\text{C}$
- Operating Temperature Range  $-10^\circ\text{C} \pm 60^\circ\text{C}$
- Aging rate Less than  $\pm 5 \text{ ppm/year}$
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R. G. HENDERSON VK1RH,  
Federal WICEN Co-ordinator

## WICEN MOBILE/FIELD STATION CHECK LIST

What does the well equipped WICEN operator take with him when called out? The answer in a nutshell is enough to be self-sufficient in the field for at least 48 hours.

## PREPARATION

Preparation is the key word, have your equipment prepared and other stores identified so that you don't take half a day to get mobile.

## EQUIPMENT

Make up now all the cables, connectors and leads you need, don't put it off until called out. What's more, they will be of general use around the shack. That includes power cord adaptors, headphone-mike sets and field antenna, such as a good fox hunting 2 metre yagi. Make sure your equipment is capable of a rough journey and your nicad battery pack is charged.

## VEHICLE

Spare tyres (inflated), spare fan belt, spare light bulbs and a tool kit are all helpful for getting you to where you want to go. Suppressed ignition systems, efficient alternators/generators and regulators help you to stay on the air when you get there. Remember your car must be reliable so fix the overheating radiator, worn parts and nuisance faults now.

## YOURSELF

A faulty operator is expensive to replace, so make sure you are equipped to handle the job. Clothing can be vital if you leave the shelter of your vehicle. Don't enter bushfire territory wearing T-shirt, stubbles and thongs, this gear is also unwise for night time bush wear. Temperatures in Australia can range from -10°C to 40°C, so dress for the prevailing weather to avoid sunburn, frost bite and hypothermia.

## PERSONAL EFFECTS

Amateurs are human so take with you the necessities of life. Items such as toothbrush, toilet paper, spare clothing, soap and towel will not only make you feel better, but more important for your associates, make you nice to be near as well. Sunglasses, sunburn cream, insect repellent, a torch and a good book will make the hours pass more pleasantly. To attend to the needs of the subject in hand, message pads, clipboards, pens and pencils, maps, compass, etc., will be necessary. For real comfort, bring along your tent, table and chairs, camp stretcher and sleeping bag.

## THE INNER PERSON

Food for the complete WICEN body is essential, suffice it to say that a hungry operator is a whingeing operator. Take along tins of Spam and meat, fruit and

biscuits to sustain your operations for at least 48 hours. Also the necessary brew makings for tea, coffee, Bonox and a gas cooking set.

## DISASTER KITS

Much of the material mentioned above can be assembled in an old tin trunk, battered suitcase or similar container to fit the boot of your car. Again it might be subdivided into two or three containers, say a radio/equipment one, a clothing bag and a food/cooking kit. The first-named has uses on fox hunts and amateur radio conventions, the second for impromptu outings to the beach and the third for barbeque lunches.

## CONCLUSIONS

From the thoughts above you should be able to draw up your personal check lists/load lists and assemble the gear. Do it now. Remembers the Scouts' motto "Be Prepared".

## WICEN REGISTRATION FORMS

Most States have their own WICEN registration forms so the following notes will only record in a general way matters that might be included in them.

Identification: Name, address, call sign.  
Contact details: Home and work phone numbers.

Availability: How long can you afford to be on duty?

Response time: How much time do you need to react to a call-out?

Vehicle: Type — cross-country capability.  
Equipment: Transceivers, bands, modes.

Power supplies: Generators, mains supplies, batteries.

Antenna: Types and masts available.  
Other facilities: Caravan, trailer, tents.

Previous experience: WICEN, SES, Services, VRA, etc.

Special skills: Bushwalking, caving, remote repeaters, etc.

Some States have EDP programmes to sort and present the data and provide co-ordinators with a series of quick look-up tabulations.

Respect the delicate balance between confidentiality and having adequate information available to those who need it. Often an abbreviated contact list plus general capabilities (e.g. 2m FM mobile/ fixed, HF/VHF, mobile HF only) is adequate for most WICEN office-bearers. ■


## QSP

### SECURITY PROVISIONS

According to an article in Worldradio, July 1981, the existing Section 605 of the US Communications Act reads — "This section shall not apply to the receiving, divulging, publishing or utilizing the contents of any radio communication which is broadcast or transmitted by amateurs or others for the use of general public, or which relates to ships in distress." The amending bill submitted by Senator Goldwater proposes — "This section shall not apply to the receiving, divulging, publishing or utilizing the contents of any radio communication which is transmitted by any amateur station, or by any station for the use of the general public, or which relates to ships, aircraft, vehicles or persons in distress." ■

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ATN 28-30-5	13.2	8.3M	\$199

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ATN 50-502.5-5	11.9	3.5M	\$95
ATN 50-53-8	14.2	5.5M	\$149
ATN 50-53-11	16.2	9.0M	\$185

2 mx			
ATN 144-148-8	12.7	2.2M	\$55
ATN 144-148-11	14.6	3.8M	\$65
ATN 144-148-16	17.0	6.3M	\$85
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70 cm Model (N Conns)			
ATN 420-470-6	10.2	0.6M	\$45
ATN 420-470-14	14.2	1.5M	\$59
ATN 420-440-11	15.7	1.85M	\$65
ATN 420-440-15	16.7	2.85M	\$75
ATN 432-16LB	17.2	3.7M	\$85

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ATN 47-5	9.2	0.65M	\$45
ATN 47-7	10.2	0.7M	\$49
ATN 47-11	17.0	1.7M	\$59
ATN 47-15	17.8	2.8M	\$69

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ATN 580-14 (N Conns)	17.5	2.0M	\$65

Also available power dividers/couplers, quarter wave sleeve baluns and matching harnesses for stacks of two or more arrays; also 1:1 and 1:4 baluns in 200W or 1 kW and insulators for homebrew. Write for free catalogue.

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20-30-6S	6	4	7.5	\$189
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20-30-8	8	8.5	10.2	\$299

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## AWARDS COLUMN



Bill Verrall VK5WV

7 Lilac Avenue, Flinders Park, SA 5025

For our RTTY enthusiasts, here are details of two awards available from within VK for working/printing stations on the RTTY mode.

### THE WESTERN KEYBOARD BASHERS AWARD OF PERSEVERANCE

The Western Keyboard Bashers' Award of Perseverance is offered to all amateurs or SWLs who have contacted or, in the case of SWLs, printed ten (10) Western Australian amateurs on RTTY on any band. It is hoped to encourage the seeking of VK6 amateurs by other States and possibly other countries. Also available will be various endorsements, such as all on one band, QRP working, etc.

#### Rules

1. Contacts with all WA amateurs with either Full or "Z" calls are permitted.
2. The only mode permitted is RTTY.
3. Only one (1) contact per WA station is allowed to count towards the award.
4. All contacts must be two-way RTTY contacts except for the SWL class.
5. All contacts must be listed showing date, time and frequency and should be verified by one other amateur who should sign the log as well. QSL cards should not be sent.
6. All contacts after the 1st July, 1978, are eligible.
7. Cross band or cross mode contacts are not countable.
8. A fee of \$1.00 should be enclosed to cover postage, etc.
9. Members of the AARTG are permitted to apply for the award.

#### Applications

All applications and enquiries should be directed to—Secretary, Australian Amateur Radio Teleprinter Group, Box N1002, GPO, Perth, WA 6001.

#### Description

This award is presented in two colours on white paper. The title is in red and all other printing in black. The award measures 300 mm x 210 mm.

## THE WESTERN KEYBOARD BASHERS AWARD OF PERSEVERANCE

awarded by

THE AUSTRALIAN AMATEUR RADIOTELETYPE GROUP

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WESTERN AUSTRALIAN AMATEURS USING RADIO TELETYPE
- OR
- ☐ THE PRINTING OF NO LESS THAN TEN WESTERN AUSTRALIAN  
AMATEURS USING RADIO TELETYPE
- AND THEREFORE HAS EARNED THE RIGHT TO HOLD THIS AWARD

WILL DONE

ENDORSEMENTS

PRESIDENT

DATE

SECRETARY

DATE

### The South East Queensland Teletype Group



### THE SOUTH EAST QUEENSLAND TELETYPE GROUP AWARD

This award is open to all transmitting and listening amateurs who gain award points in the following manner:—

#### Rules

1. Australian amateurs must score five (5) points, overseas amateurs must score three (3) points.
2. To qualify, a station must, where possible, copy the official station of the South East Queensland Teletype Group, VK4TTY, during a news broadcast and, in the case of a transmitting amateur, participate in the callback (2 award points). A portion of the printout of the news broadcast together with the date, time, frequency and the broadcast number are to accompany the request for the award.

3. Additionally, a transmitting amateur must work three member stations of the South East Queensland Teletype Group on RTTY (1 point each). Log extracts and/or printouts are to be included with the award application, and each member station may be counted only once towards the award.
4. Listening amateurs should, in lieu of 3, forward log extracts and/or printouts of the three contacts involving different member stations of the South East Queensland Teletype Group (1 point each).

#### Applications

Applicants for the award should forward the above information, together with one dollar Australian or 5 IRCs to cover postage and printing costs, to the Secretary, SEQTG, PO Box 184, Fortitude Valley, Qld. 4006, Australia.



## Description

This award is printed in two colours on high quality parchment paper and features and illustration of a Model 19 printer in gold in the background, and all printing in black. The surround is also in gold and the award measures 300 mm x 210 mm.

## SWL CENTURY CLUB AWARD

This WIA award for SWLs has been on the books for a long time, but I have not

been able to find any records or sample since I have been FAM. This was brought to the attention of the Federal Executive and it was decided at the last Federal Convention to delete it from the awards programme because of lack of interest.

Therefore this award will lapse and be deleted from the WIA records on 31st December, 1981, unless I receive any enquiries.

## CORRECTIONS

The following corrections are made to the WIA award listings which appeared in the September 1981 issue:—

1. Under DXCC top listing phone, read: VK6LK 307/321, VK4PX 297/312.  
Under open, read: VK3AHO 294/326.
2. Under DXCC amendments, CW, read: VK2SG 138/148.

Good hunting. ■

# INTERNATIONAL NEWS

## AMATEUR RADIO RE-BIRTH IN CHINA

One item of considerable potential interest this month. Here is the text of a press release statement kindly forwarded to the WIA by VS8CT, the President of the Hong Kong Amateur Radio Transmitting Society, who commented in a covering letter:—

"I am hoping that this will be the beginning of further contacts and I, personally, am hoping that in the event that China only initially starts communications internally, that we, as part of mainland China, will be privileged to assist in the training and helping them to emerge into our community of modern day amateur radio."

This is the press release:—

66 Hong Kong, Saturday, 12th September, 1981.

The Boeing Employees' Amateur Radio Society (BEARS) delegation arrived in the PRC on September 4th, 1981, and departed on 12th September, 1981. We were the first official international amateur radio delegation to visit China in more than 32 years. Our host was the Chinese Institute of Electronics, a branch of the 4th Ministry of Machine Building. The delegation members consisted of C. P. (Pat) West W7EA, delegation leader, H. (Henry) Oman K7HO, R. W. (Bob) Hudson K7LAY, W. P. (Bill) Showers KC7CF.

All the delegation members are Boeing employees from Seattle, Washington, with a total of more than 110 years of Boeing service. Our other sponsor was the Western Washington DX Club. Contributors to our expedition included the R. L. Drake Company, who supplied two complete TR7 stations; Telex Hygain, who supplied two tape dipoles antennas; and ARRL, who supplied a copy of the film 'Wide World of Amateur Radio' and a few books. Our delegation prepared and presented a four hour slide presentation covering amateur radio in the USA. This presentation was made in each of the cities that we visited. Although we did not expect to operate we were permitted to set up a demonstration station in Beijing and communicate with our home city, Seattle. This historic event occurred at about 10 p.m. Beijing time on September 6th. Our contact in Seattle representing our two clubs was W7PHO and our call sign in Beijing, also representing our two

clubs, was K7LAY. We are very sorry that we could not talk to more stations. The Chinese advised us that our transmissions were the first authorised amateur radio communication demonstration in more than 32 years, truly an historic event. This contact signifies the increasing friendship between our two nations.

A second historic event occurred on September 9th. With the assistance of our delegation in Shanghai, the Chinese in Beijing installed a Drake TR7 station and the Chinese in Shanghai also installed a Drake TR7 station. Successful communications were established between Beijing and Shanghai by Chinese operators for the first time in more than 32 years. The operator in Beijing was Chen Ren-Mo, and the operator in Shanghai was Hsu Y.C. Mr. Hsu was licensed many years ago as XUBCH and C1CH. Although propagation was not good between Beijing and Shanghai, communications were established about 10.45 p.m. on September 9th.

The station in Beijing used the call sign C1E and the one in Shanghai used the call sign K7LAY. Both stations were heard in many countries with strong signals. The Drake equipment performed excellently despite much rough handling during transportation.

The Chinese asked us to tell the world that their top Government leaders are solidly behind amateur radio and before too long China expects to establish many friends throughout the world through the media of amateur radio.

Our delegation was overwhelmed by the reception we received in China and very honoured to be the first official amateur radio delegation to China and to demonstrate amateur radio. In China we met many oldtimers and our meetings with them were precious events in all our lives.

We are very appreciative to our host in China, the China Institute of Electronics, and also to the China National Radio Sport Commission and the Shanghai Institute of Electronics. ■

A WIA member aboard HMAS Swan on a visit to the area at the time also reported this story and added that the warship's visit to Shanghai was the first of an Australian warship to China since 1949.

## RECIPROCAL LICENSING

Several members have written about their own experiences with amateur licensing in overseas countries as the result of an article in the WIA 1981/82 Call Book and September 1981 AR, page 20.

VK2ZXU writing about amateur licensing in France in 1978 commented "It is possible to obtain a form of temporary licence by making local application . . . what one does is to approach the Chef of the PTT in the Department one resides in (or alternatively in Paris — 'Immeuble PTT Réseau International, 75584 Paris Cedex 12') and apply for a temporary permit. You need the original of all licence papers to confirm your Australian status, together with all travel and residential documents. It helps to have a recommendation from a French operator and to be using type approved commercial equipment. There can be considerable time delays so one should not try this for short visits, e.g. less than six months."

"Approached in the right way with all necessary documents, some local advice and recommendation, and at least four passport photos . . . it is surprising what can be done. One false move, however, and you may as well go home and start again."

In a letter from VK5BW Alan comments "VKs may easily obtain visitors' licences in Denmark, Finland, Holland, Ireland, Liechtenstein and Norway. Call signs in the UK (for visitors) are issued as G4 to Commonwealth country amateurs (VK, VE, ZL, etc.)."

## PAPUA NEW GUINEA

From the May 1981 issue of "Garamut" the PNGARS newsletter comes news that their QSL Bureau is now via Box 141, Port Moresby (instead of Box 204, Port Moresby, the Society's address), the Society's 1981 subscription is K5.00, and that classes are held regularly in Port Moresby through P29PS. Some officers of the Society for 1981/81 were listed as President, P29LS; Secretary, P29CH. The Society provided communications for the Independence Safari Rally. The official PNGARS net is on 3565 kHz at 09.30Z Thursdays. ■

SUPPORT OUR ADVERTISERS

# NOVICE NOTES



Edited by Ron Cook VK3AFW

## A BOO-BOO IN JUNE?

In the June issue we discussed PEP power and Paul VK5ZPU read the column and has written in to say that I was in error in using the term watts RMS. After due consideration I accept Paul's criticism; as they say in the classics "There ain't no such beast as RMS power". Electrical power is the product of DC volts and DC amps or the product of RMS volts and RMS amps when the power is dissipated in a resistive load and when a steady state has been reached.

When an RF signal is pulsed or fed to a reactive load things get a bit more complicated. I had intended to avoid those complications and, in keeping with fairly common industrial practice, I used the term watts RMS to differentiate a steady AC power dissipation (i.e. key down CW) from instantaneous power or average pulse power for example. There is no disputing that my use of that term is technically incorrect and for that error I apologise. To make my article quite correct delete the "RMS" after the words "produces 7 watts" and "by definition 1 watt".

To make the matter clear I reproduce the offending paragraph and Paul's letter.

Consider a simple CW transmitter running, say, 10 watts DC input to the final amplifier. Now assume that it is an efficient amplifier and produces 7 watts RMS when connected to a 50 ohm resistive load. The load will heat up and will get just as hot with the 7 watts of RF as with 7 watts of DC. This is of course to be expected as by definition 1 watt RMS of RF produces exactly as much heat as 1 watt of DC.

Page 40, Amateur Radio, June 1981.

Dear Sir,

I wish to point out an error in the discussion on Peak Envelope Power in Novice Notes by Ron Cook VK3AFW in AR's June issue 1981. At the bottom of the first column he defines 1 watt RMS as equivalent to 1 watt of DC. This is incorrect. The

correct statement is that 1 watt average power of an RF waveform (or just 1 watt RF) is equivalent to 1 watt DC. RMS quantities of voltage and current are important for finding the equivalent heating power of a transmitter, etc., because average power  $P_{av} = V_{rms} \times I_{rms}$  for a resistive load irrespective of waveform. This is what Ron has calculated for an unmodulated CW carrier but he calls it RMS power, which is incorrect.

To demonstrate the difference between RMS power and average power, it is possible to calculate from first principles the ratio between RMS and average powers for a sine wave as follows, but bear in mind that RMS power is quite a meaningless quantity.

Consider a sinusoidal voltage and current flowing in a resistor as in Fig. 1. The voltage varies with time according to

$$v(t) = V_p \sin t$$

and the current according to

$$i(t) = I_p \sin t$$

hence instantaneous power is

$$p(t) = V_p \sin t \times I_p \sin t \\ = v(t) \times i(t)$$

i.e.  $p(t) = V_p I_p \sin^2 t$ , as shown in Fig. 2.

The RMS value of any periodic waveform  $x(t)$  is defined in mathematical terms as:

$$X_{rms} = \sqrt{1/(2\pi) \int_0^{2\pi} [x(t)]^2 dt} \\ \text{or} \\ (X_{rms})^2 = 1/(2\pi) \int_0^{2\pi} [x(t)]^2 dt$$

For the instantaneous power waveform:  
 $(Prms)^2 = 1/(2\pi) \int_0^{2\pi} (V_p I_p \sin^2 t)^2 dt$   
 $= (V_p^2 I_p^2)/4 \times 6/4$   
 (I have left out several lines of Paul's working to help the typesetter.—VK3AFW.)  
 or—

$$Prms = V_p I_p / 2 \times \sqrt{6/2} \\ = P_{av} \times 1.225$$

i.e. RMS power = 1.225 × Average power for a single wave.

Note that the RMS power is greater than the Average power, a fact often exploited by amplifier salespeople to exaggerate their power output figure.

I hope the above discussion has helped to clear the confusion and banned the use of the confusing almost always incorrectly used term "RMS power".

Yours faithfully,

Paul Lucas VK5ZPU.

So there we are. RMS power exists as a mathematical concept only. Real power, the stuff that boils water, etc., is produced by effective voltages and currents. Any AC signal of any wave shape can produce power and, for a resistive load, it is possible to calculate the power if we can measure the voltage and current and determine a value for each such that their product is equal to the power (heating effect) produced. These values of AC voltage and current are the effective values. It happens that if we know the wave shape we can calculate the effective values. An effective current is one that produces the

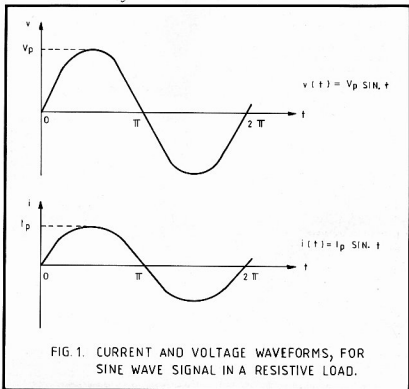


FIG. 1. CURRENT AND VOLTAGE WAVEFORMS, FOR SINE WAVE SIGNAL IN A RESISTIVE LOAD.



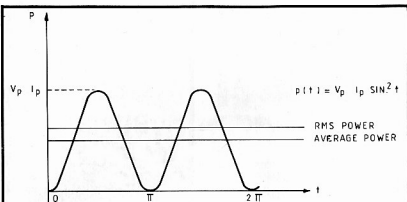


FIG. 2 THE POWER WAVEFORM FOR FIG. 1

$$\text{NOTE: } p(t) = V_p I_p \sin^2 t$$

$$= V_p I_p \left( \frac{1}{2} - \frac{1}{2} \cos 2t \right)$$

$$= \frac{1}{2} V_p I_p - \frac{1}{2} V_p I_p \cos 2t$$

THE FIRST TERM IS DC OR AVERAGE COMPONENT  
(READ BY A WATTMETER)

THE SECOND TERM IS THE AC COMPONENT AT 2 X  
VOLTAGE AND CURRENT FREQUENCY

same heating effect as a DC current of the same numeric value. So 1 amp effective produces exactly as much heat as 1 amp DC, i.e. it has the same effect.

The mathematical procedure to calculate the effective value involves taking the Root Mean Sum of the Squares or RMS for short, as Paul has done. Hence effective values of voltage and current are called RMS values.

Well that's pretty heavy stuff for beginners. Don't worry if you don't follow Paul's calculus, it's the answers that count, not an understanding of the mathematical derivation. Thank you for writing in, Paul, I appreciate your efforts and I hope we have sorted out another problem.

#### OLD CO-AX FOR SALE

I cannot emphasise enough the importance of an efficient antenna system. This includes not only the radiating section but also the feedline which is usually coaxial cable. The cable may be old — is it lousy due to corrosion caused by water getting into the braid? (Perhaps you forgot to seal the exposed end at the antenna). The cable might be new but cheap — is it lousy at 28 MHz? The answer to this and any other question of a similar nature is easy if you have a VSWR meter and a CW source with an adjustable output; there is a catch which is explained.

To measure the loss of a length of cable all we need to do is to short one end and measure the VSWR at the other. If the cable has no loss the VSWR meter will read infinite VSWR, i.e. there will be no change between forward and reverse indications. To avoid damage to the RF source it should be ascertained whether or not it will operate into high VSWR loads. An FT7 with the CW level control modification can be set to, say, 1 watt out into 50 ohms and should be quite safe to use for these tests; keep an eye on the collector current and do not let it exceed 1A.

Suppose that we find that the VSWR is infinite. This means that all the power sent into the cable has travelled to the short, been reflected, and travelled back to the transmitter. No power has been absorbed by the cable.

Suppose the cable has a 3 dB loss. By the time the power pushed into the cable reaches the short, half has been absorbed by the cable. All this power, 50 per cent, will be reflected but by the time it reaches the sending end again only half the reflected power has made it back as the 3 dB loss in the cable has again absorbed half. Thus the reflected power is only 25 per cent of that that started out. This will show as a VSWR of 3:1. We can calculate the cable loss by measuring the VSWR if

we know the formulae. John Frank WB9TQG discusses this in May 1981 Ham Radio.

The formulae for gain or loss in dB, a, is:—

$$a = 10 \log (P_2/P_1) \text{ dB}$$

where —

P1 is the forward power and  
P2 is the reflected power.

Now we want the attenuation or loss for a single trip, i.e. we want to know the loss between the transmitter and the antenna. So the formulae becomes:—

$$a = 5 \log (P_2/P_1) \text{ dB}$$

If your VSWR doesn't indicate forward and reflected power then the formulae for cable loss becomes:—

$$a = 5 \log [(SWR - 1)/(SWR + 1)]^2 \text{ dB}$$

Suppose we find that the SWR is 2:1.

Then —

$$a = 5 \log [(2 - 1)/(2 + 1)]^2$$

$$= 5 \log [1/3]^2$$

$$= 5 \log 0.1111$$

$$= -4.8 \text{ dB}$$

So the cable loss is 4.8 dB, a loss is indicated by the negative sign.

Now many VSWR meters only have a red band above 3:1 and no markings. If the meter has a scale marked 0 to 1 as well as SWR indications we can use a different formulae. If your meter does not have a linear scale marked 0 to 1, then you can connect another meter in parallel with the inbuilt meter. A 0-50 uA meter with a 0 to 1.00 scale, such as may be found on a multimeter, would be ideal.

Set the sensitivity and/or power level to obtain a reading of 1.00 full scale on the "forward power" or "set" position. Switch to the "reverse power" position or "SWR" position. The meter will read less than 1.00 unless the cable has no loss. By squaring the reverse reading we get the power ratio directly. For example, if the meter reads 0.90 on "SWR" then the reflected power ratio is  $0.90 \times 0.90 = 0.81$ . Using the appropriate formulae:—

$$a = 5 \log (P_1/P_2)$$

we get —

$$a = 5 \log 0.81$$

$$= -0.46 \text{ dB}$$

So our cable loss would be less than half a decibel. Table 1 shows the results for other reverse readings. The results may be plotted on a sheet of graph paper and a smooth curve drawn through the points if you wish.

Having made the measurement you must decide if the result is acceptable. Table 2 gives attenuation figures for the two most common coaxial cables.

#### THE CATCH

Actually the losses you measure will be greater than will occur if the load (antenna) is correctly matched. Fig. 3.18 of the 12th Edition of the ARRL Antenna Handbook gives the corrections. Table 3 is extracted from that Figure.

Reverse Meter Reading (FSD = 1.00)	Reflected Power Ratio	VSWR	Cable loss (dB)
1.00	1.0	Infinite	0.0
0.90	0.81	19:1	0.46
0.80	0.64	9.0:1	0.97
0.70	0.49	5.7:1	1.5
0.60	0.36	4.0:1	2.2
0.50	0.25	3.0:1	3.0
0.40	0.16	2.3:1	4.0
0.30	0.09	1.9:1	5.2
0.20	0.04	1.5:1	7.0
0.10	0.01	1.2:1	10
0.0	0.0	1.0:1	Infinite

**TABLE 1:**  
**CABLE LOSS FROM VSWR TESTS**  
NOTES:

- The VSWR and cable losses are calculated from the reflected power ratios and are rounded to two significant figures. Greater accuracy would require better measuring equipment than most amateurs possess.
- FSD means full scale deflection.

Cable Type	Nominal Attenuation (dB/100m) at various Frequencies (MHz)	1.8	3.6	7.0	10	14	21	29	52
RG58	2.2	3.0	4.0	4.6	5.3	6.6	7.8	11	
RG8	0.8	1.2	1.6	1.8	2.2	2.7	3.3	4.5	

**TABLE 2:**  
**NOMINAL ATTENUATION OF RG58 AND RG8 COAX CABLES**

To find the nominal attenuation of your cable multiply its length (in metres) by the attenuation at the test frequency and divide by 100. (The above data based on information from Acme Engineering Co.)

Matched line loss (dB)	Additional line loss (dB) for various VSWRs			
	1.0:1	2:1	5:1	20:1
0	0	0	0	0
0.5	0	0.12	0.64	2.9
1	0	0.20	1.1	4.2
3	0	0.38	2.0	6.3
6	0	0.47	2.4	7.2
10	0	0.51	2.6	7.4

**TABLE 3:**  
**ADDITIONAL LOSS CAUSED BY STANDING WAVES**

Note that values are approximate. See text for source.

It may not be obvious but cable losses of less than 3 dB are difficult to measure accurately if we use the VSWR meter and want to know the loss when the load is matched. For losses greater than 3 dB the accuracy gets better and is quite good enough for most amateur applications.

Why does VSWR increase loss? Well the voltage across the cable is much higher in parts and so the dielectric is under more stress and so the losses are higher. Also the current is higher in some areas and so the power lost due to cable

resistance rises. As power is proportional to current squared the losses increase very rapidly with increasing VSWR. (The current has the same standing wave ratio as the voltage.)

Suppose for example you measure a line loss of 4 dB. It is likely that if the cable were matched at the load then the line loss will be about 3 dB. A line loss of 2 dB measured by our method will be mainly due to the VSWR and the matched cable loss will be perhaps 0.5 dB or so.

Therefore it is strongly recommended that cable loss tests be done at the highest frequency available, say 29 MHz, so that larger attenuations are measured and the errors reduced.

Perhaps some knowledgeable reader with a computer could calculate a table of cable attenuation vs. VSWR, taking into account the extra loss caused by VSWR. Most tests, even the ARRL, do not take into account the additional loss caused by VSWR, hence many people may have discarded cable without good cause. Fig. 3 shows how attenuation can be measured without these errors. Two similar power meters are required.

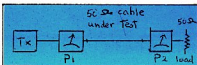
Don't discard the VSWR and short circuit method as it does always give indicative results. If you have two similar lengths of cable, one weathered and one in mint condition, it will give a good comparison.

#### HIDDEN MISMATCHES?

You may have guessed it by now but if your cable has some losses it will make your antenna match look better. From Table 1 we see that a cable with 10 dB loss will give a VSWR at the transmitter of 1.2:1 even if it is open or short-circuited at the antenna! The transmitter will be quite happy with such a load but you won't work much DX. Connect an aerial with a VSWR of say 4:1. The transmitter may put out say 10 watts. The 10 dB loss in the cable consumes 9 watts, leaving 1 watt for the aerial. It accepts 0.64 watts and reflects 0.36 watts. Only 0.036 watts arrives back at the VSWR meter, giving an indication of 1.13. If the aerial radiates all the power it accepted the system has a loss of  $10 \log (0.36/10) = 14.4$  dB. This is a loss of about 3 "S" units and applies to received as well as transmitted signals.

So a lousy cable may give pleasing readings in the shack but it doesn't help in any other way. To be sure measure the antenna VSWR at the antenna.

73. VK3AFW.



**FIG 3:**  
**MEASURING MATCHED CABLE LOSS**  
Loss =  $10 \log P1/P2$  dB  
where P1, P2 are power meter readings in watts.

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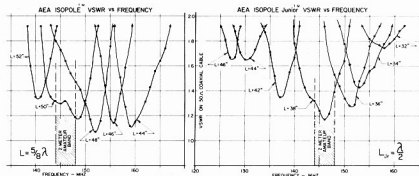
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# LISTENING AROUND

With Joe VK2BJX, Buronga, NSW

Well, what follows right now has nothing to do with amateur radio, but because it's current news it might make a good opening for this column. The fact that we've been eating horse meat for so long without knowing it, reminds me of a little cafe near Waterloo Station, London, where, despite the food rationing still on in Britain in 1949, I could always get steak. Remarkable on this "unique" service, a fellow customer drew my attention to a faded notice high up on the wall which said "Only the best horse meat served here!". It might have been Steptoe and Sons old nag for all that I know, but it tasted OK, and it shows that at least the Poms were honest about it, don't you think?

I'm satisfied that we amateurs are a resourceful lot and physical handicaps are no bar to one's operating. Take, for example, a QSO that I was listening to the other day between two Californian stations and a ZL. Much to my astonishment one of the Yanks said that he was using "an artificial voice". He had had his vocal cords removed, so he said, but that didn't stop him modulating his transmitter with the "artificial voice". His articulation was quite good, and I didn't miss a word.

Remember the Wizard of Oz — he was a wiz if ever there was. Pascoe Vale has a Wizard by the name of Jack VK3NOG. Although only a novice call holder, he's a real "wiz" on CW. A visitor to Buronga a couple of months ago operating CW with a tiny key on the dashboard of his car, he was bowling the Yanks over like nobody's business. He's an ex-PMG operator and sure can rip along fast on that key. After he had scuttled about half a dozen Yanks, a VK6 demurely attempted to call Jack, but Jack went back at him so fast that the VK6 decided not to challenge him and quickly departed. Thanks for that wallet, Jack — it will lessen my chances of another \$40 slipping out of my pocket like it did when I was riding my bike.

Brian VK1DX is off to Antarctica at the end of this year. He'll be heading for Hobart first to do some training, thence to Canberra, and finally he'll be aboard the "Thala Dan" on 24th of December, plus his Icom 720A, heading for Mawson as a physicist with a special interest in the collation of ionospheric data which will be sent back to the ANU computers in Canberra for analysis. His call sign at Mawson where he will be for 12 or 13 months will be VK0DX, and he hopes to come up on 80 as well as other bands.

Local Buronga people cannot remember a colder or wetter winter than we have just passed through, and while I was shivering and shaking from the cold (like Elvis P.) who should I contact maritime

mobile near Frazer Island but Ralph VK2PHO from that Banana Republic, Coffs Harbour. Ralph was aboard his home made yacht, the "Shara" (aboriginal for Salt Water). Before retiring to Coffs Harbour, Ralph was originally a teacher at Wentworth Central School in 1962 and knows Buronga where I am. It's a pity that Jack VK3NTR from Ararat, or Steve VK4SE from Toowoomba, wasn't in the QSO also, because they're pretty keen yachtsmen.

Tom VK3VY, of Airport West, works at Radio Australia and has asked me to look him up when next I am in Melbourne to see what makes that kookaburra laugh on the overseas service. Might take you up on that, Tom, for I would like to see what makes "RA" tick.

Reading the mail, which is my most favourite occupation except when I'm making noises for others to listen to, often makes interesting listening, like when a VK5 describing his XYL was heard to say "When you see her, she looks like a round dumpling". I bet she crowned him with the rolling pin after that.

Sue VK5NOO was heard to say one night that she reckons the men do a better job of waffling than their XYLs. Enough said . . .

My present rig, a vintage EICO 753 (mostly valves but with a transistorised VFO), has been plagued with various troubles which, one by one, are gradually being sorted out. First there was intermittent hum on the transmission which was found to be poorly mounted electrolytics in the power supply. Then there was an effect called "back wave", and there was nothing in the books that I have to indicate what could cause "back wave effect". Not even in the ARRL was there any mention of the cause of it, or a cure. What happens with backwave effect on keying is that even in the key-up position the transmitter was still putting out about 50 per cent of the full power CW. This can make it impossible to copy.

When SWL Alan Chung, of Cooma, visited me recently, we went over the keying circuit together. Two capacitors became suspect when it was found that in the key-up position instead of there being

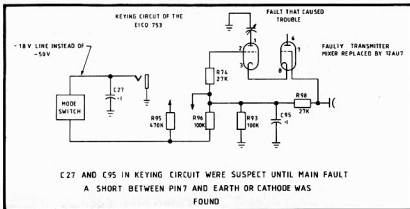
50 volts across the key contacts, there was only 18 volts. So we were sure that either C27 (a .1 across the key near the mode switch) or C95 (a .01 in that part of the circuit connected to pin 7 grid of the 12A27A transmitter mixer valve) was leaking. A day or two later I observed that the backwave effect was also occurring in an intermittent fashion on my SSB. So remembering an old radio repair fault finding technique called tube tapping, I found that got a positive response on my output meter every time I tapped the 12A27A itself. Checks on a valve tester soon revealed a bad short from pin 7 to either cathode or filament. I didn't have a spare 12A27A so popped a vintage 12AU7 in, and hey presto, the backwave disappeared. A replacement 12A27A has since been obtained and is now doing good service.

I've had a wonderful response on the air to the writing of this column and comments have come in from all over Australia. And I've had letters from shortwave listeners also — some long and very helpful, the most recent being received yesterday (15/9/81) from Rod Torrington VK3TJ, of South Pascoe Vale. He says that he has been running an EICO 753 for 11 or 12 years, having originally put it together as a kit set, and he's given me a lot of very useful information about the pitfalls that he struck along the way, and the way he overcame various problems with this set. Thank you very much, Rod, and the very many others who have helped me in so very many ways with sorting out the problems that I have had. As a result of your efforts you will now be hearing me not only on 80, but on 40 and 20 also, and on CW on all three. Some of you millionaires might be having fun with your solid state black boxes, but I sure am having some fun, and gaining much valuable experience, with my vintage EICO 753.

I've used up my space, but before I sign off, thanks again to all who have helped me with my teething problems with the EICO and for the many kind and encouraging comments that have been made on air about this column.

73, see you all later.

Joe VK2BJX.



# ALARA

AUSTRALIAN LADIES' AMATEUR RADIO  
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# LETTERS TO THE EDITOR

Any opinion expressed under this heading  
is the individual opinion of the writer and  
does not necessarily coincide with that of  
the publisher.

117 Rivett Street, Hackel, ACT 2602.  
10th September, 1981.

The Editor,

Dear Sir,  
I have been tempted many times to put pen to paper and air my grievances but have refrained from doing so in the hope that the cause of my irritation may cease, but alas — no it hasn't and in fact has worsened.

Maybe my cause is hopeless as, after all, my complaint is the so-called "Gentleman's Agreement" regarding the use of SSB in the CW segment of those bands which the novice operators share with other amateur users.

Each operator derives pleasure from his or her particular interest during the time, often limited, that one has to pursue the hobby of amateur radio. My particular interest is in CW and mainly in the 15 metre band of which we have a lousy 25 kcs for that mode.

Unfortunately my pleasure is frequently ruined by those operators who consistently disregard the agreement, to which I have referred, by their blatant and persistent use of SSB between 21125 and 21150 kcs.

I will refrain from naming the "offending" call signs for I'm sure if they read this article each will know to whom I am referring, in many instances the same old offenders can always be relied upon to be there on "their" frequency. One would think it had been allocated by DCC for their exclusive use.

Another aspect of this is my dismay that the principals in this thoughtless behaviour are novices; but not that ACP operators are without blame either. My point is, how can we as novices expect a fairer share of the "goodies" when we're not prepared to respect the parameters that have been set on us and show consideration to other users and their interests.

In grinding my axe I know I speak for many operators who feel very keenly about this issue, and we should let that fact be known "on air". I have heard the SSB users in the CW segment voice their objection to the QRM from the CW operator. How about this?

Look, this is a wonderful hobby from which, as I said before, we all derive our special interests and pleasure. Surely it's not asking too much of us to respect the interests of one another so that we all might have a fair go!

Yours to all!

73 to all!

Cec Maloney VK1NCX.

The Editor,

Dear Sir,  
Publishing articles such as "Visiting a Ham" (AR September 1981), in my opinion, showed a distinct lack of editorial responsibility. Please do not print my name, address or call sign — I don't want to hear any QQ calls coming from my doorbell, just in case some turkey takes the article seriously.

Yours sincerely,

Name and address supplied.

21 Russell Avenue, Woodend, Vic. 3442  
3rd September, 1981

The Editor,

Dear Sir,  
In recent months we have seen a vast increase in the number of amateurs using the RTTY mode on our bands. Many of these chaps are using computers to generate RTTY. Now the snag is that these fellows have, in most cases, never used a machine to generate RTTY and therefore do not know the finer points of RTTY. The trouble is that their computers automatically insert a line feed

and carriage return at the end of the line. Unfortunately, this is just not good enough. RTTY operators must always send two carriage returns at the end of each line and then they should send one line feed followed by two letter- or figure-shifts, depending on how they wish to begin the next line.

Another problem is when they wish to send some figures during their usual text, these new machines automatically insert just one shift where two should be sent.

Perhaps these chaps using computers to generate RTTY should give a thought to those of us who are forced to use old mechanical machines that do not have automatic line-feed and carriage return at the end of each line.

Yours faithfully,

Terry Robinson VK3XCM.

5 Masons Parade, Gosford 2250  
22nd September, 1981

The Editor,

Dear Sir,

## PHONE PATCHING

As one who participated in passing third party messages in the recent Telecom strike I must support the views of James Goodger VK2JO. While the indirect procedures used were of great value, sending messages concerning sickness, alleviating distress and notifying deaths and births to country relatives, I believe that amateurs could provide a more efficient and streamlined service by direct phone patching.

With the development of CB radio, two-way commercial mobile-to-base radio, and satellite communications run by private commercial firms, it is plain that there is no longer a monopoly in the transfers of messages. The reasons formerly given for denial of third party privileges were that it provided unfair competition for an essential government service. In 1981 clearly the small volume of traffic handled by amateur stations would not make any difference to the viability of Telecom.

As James says, phone patching would improve our public relations greatly and provide a much better emergency service.

Sincerely,

Lindsay Douglas VK2ON.

130 The River Road, Revesby, NSW 2212.

The Editor,

Dear Sir,

I would refer you to the article that appears on page 11 of the September issue of "Amateur Radio" entitled "Visiting a Ham" by John VK2ATT, in "The Lyebird", issue No. 14, Autumn 1981.

The opening title caught my eye and the first few lines rang a bell and stirred my memory that I had read this article before; thinking on the matter "Short Wave Magazine" came into mind and so I went through my filed copies and when I came to the September 1948 issue I found the article on page 530 of that issue. The author is given as "Jimmy" and from memory I feel then pen name hid either the editor of "S.W.M." at that time, Austin Forsyth G8FO, or the assistant editor, L. H. Thomas G8GB.

Comparing the texts of the two articles I find three trivial alterations in the copy of "AR". On line 10 of the first column "strike", on line 3 of the second column "8.20" and on line 12, also in the second column "DCC"; in the original article these read "stroke", "8.30" and "GPO" respectively.

The original article is also divided into three sections by sub-headings, the first of these occurs after the word "DCC" and reads "All-round Check", the second sub-heading is after word "11.30 p.m." on line 8 of column 3 and reads "Sealing the Friendship".

There is also a note from the editor at the heading which reads "Some readers at least will know exactly what it means to suffer this sort of experience. It is all part of the game — but need it be?" A small sub-heading also appears under the main title reading "That Personal QSO".

I remain, most cordially yours,

Norman Burton.

# The WIA Book What is it?

At the last meeting of ALARA it was decided to hold a meeting at Valda's VK3DVT QTH on 3rd October to hand over the books to the incoming office-bearers. On air meetings will start on the 4th Monday of each month from then at 1030Z on 3.570 MHz.

Members of ALARA would like to say a very special thank you to our past president, Raedi Fowler, YF of VK3BHL. Raedi was vice-president and took the chair when our president resigned last year. This enabled ALARA to continue through a difficult time while trying to get the group on to a national level. Although not licensed, Raedi is very interested in radio and especially the YL involvement, and has been a member of ALARA since its early days. She has made a valuable contribution to ALARA in the past year.

The YL sked on Thursday night has been changed to 1030Z 3.570 MHz, and also Marlene VK5QO will be on the frequency looking for someone to chat to.

ALARA numbers are increasing and on most Monday nights a new call is heard. So, g'rls, please join in, it's very friendly and informal. Also it is a chance to express your views on ALARA activity.

The VK3 State Convention is to be held at Bendigo in conjunction with the Midlands Zone Convention on 20th and 21st February, 1982. So I look forward to meeting some of you at the Convention.

Remember the ALARA Contest on 14th November, 1981. Time: 0001 GMT to 2359 GMT. Suggested frequency: Phone 28.450 to 28.550, 21.160 to 21.360, 14.180 to 14.300, 3.570 to 3.600. CW 28.100 to 28.150, 21.125 to 21.140, 14.050 to 14.060, 3.525 to 3.535.

Operation: Phone and CW—Each station may be worked twice on each band ONCE on Phone, ONCE on CW. All contacts from same QTH. Standard licence and operator procedure.

Scoring: 3 points for ALARA member.

Phone: 5 points for ALARA club station. 1 point for non-member YL or OM.

CW: Double all points for CW scoring.

Further details from me or will be published in contest column of AR, also Electronics Australia and Amateur Radio Action.

Wishing you all good DX and lots of contacts in the contest.

73/33, Margaret VK3DML.

# LETTERS TO THE EDITOR

Charles Borg 9H1BS  
22 Old College Street, Sliema, Malta  
7th August, 1981

The Editor,  
Dear Sir,

## 9H1BS — MEANING 9H1 FIRST BLIND STATION

About fifteen days ago, amongst the usual amount of QSL cards received by post, there was a letter which contained a photocopy of the article "Operation Whistek" which appeared in the June 1981 edition of "Amateur Radio".

This article was read to me by my mother and immediately I decided to give my contribution by writing this letter, hoping to encourage other handicapped persons who might be interested in this amazing hobby of radio.

To start with, I would like to say that I am 28 years old and have been blind for 12 years (since May 1959). My first contact with shortwave radio was a year after my blindness, when our local centre donated me a valve receiver. After I got the feel of the controls of this piece of equipment I started to find my way around the broadcasting bands and spent most of the day listening to broadcasting stations and typing reports to them hoping that they would acknowledge by sending me a QSL card, and sometimes other information regarding programmes, etc.

Three years passed by and through a friend I was introduced to Mr. Ron Meacham (RH1R), Head of Telecommunication Section of the Technical Institute, Paola. Ron advised me to apply for the evening course held for radio amateurs at the Institute. I attended regularly for a year and took down notes later at home with my brother's help, who at the same time as myself started his interest in ham radio.

Certain modifications had to be made to the local law regarding ham radio operations, since I was the first blind person to attempt this examination. The examination was in two parts, CW and theory. I managed passes in both sections, and my appreciation goes to all those people who helped. I now had a licence.

The next thing was to get on the air, which I did with the help of friends. I managed to acquire a small VHF transmitter (1.5 watts), together with a converter linked up with my FRG7. The antenna was a simple vertical dipole. My station was thus fully operational and presently I am the proud owner of a Kenwood TS180S, which, being a fully transistorised rig, facilitates tuning. This rig has both digital and analogue readout. Again with the help of friends I learned how to find the frequencies through counting the turns of the main tuning knob. I operate regularly on 21.160 or 14.160 from 05.00 Zulu to 06.00 Zulu beaming Australia. For the moment my shack is not furnished with audible indicators for SWR, antenna direction, etc., but from your article I gather that such aids are being constructed, so it remains for me to enquire about more details for such audio aids for the sightless radio amateur.

For my final, I would like to thank the local authorities, Mr. Ron Meacham (RH1R), the local amateurs and clubs for their encouragement and help to reach my present position in amateur radio.

Good DXing.

73. Charles Borg 9H1BS.

The Editor,

Dear Sir,

## REMEMBRANCE DAY CONTEST RULES

This year's radical changes to the RD Contest rules seem to me to detract greatly from the value and purpose of this long established and popular contest.

These purposes are, I believe, the encouragement of participation more than winning, and the friendly communication with the greatest possible number of fellow amateurs. Like other contests it should also promote operational skills and manners.

The elimination of varying point values between States has tended to favour the operator with the biggest punch, and has reduced the chances both of participating and of winning of the lower power operator. Under the old system one used to employ skill and experience to operate into States with high point values rather than bash in at anything available, at any cost to others. This type of skilled operation led to much less pile-ups than occurred this time.

I do not recommend a return to the acceptance of inter-callarea contacts (Rules (c) and (d) 1980). This system favoured the States with the heaviest amateur population. However, the option of working interstate stations twice on certain bands (Rule (b) 1980) seems to me to put a premium on skill and thus to conform with the spirit of the contest.

Another point I would like to make very strongly refers to the VHF operating rules. The one hour rule discriminates sharply against country operators who have not the same access to simplex operation as city amateurs.

To illustrate my point: I made, during Sunday only, 155 VHF contacts (144 MHz) with only 47 different amateurs. This means that I had 108 more contacts than would have been possible without the one hour rule, in addition to the fact that I had, in any case, 47 more contacts than a country operator outside simplex distance would have been able to obtain. Since my VHF contacts constituted 32 per cent of my total, and were obtained only during the second half of operating time, I feel that I was unfairly advantaged. I am sure that some country operators were discouraged, or will be in the future, since only few were heard on the bands. The one hour rules appears to me to lack any logic; its abandonment would make scoring more balanced.

As a positive contribution I suggest that the system of points based on distance be re-introduced, and that the weighting system for State totals should be modified. This weighting system is apparently intended to relate to the participation ratio (logs/licences). In order to assess not only participation but, what is more challenging, improvement in participation, an average participation factor over a number of years — say the last five — should be calculated and the actual year's State participation factors should be measured against the 5-year average; improvement or deterioration should be used as the weighting factor.

I have calculated, and present in the table, the effect of this approach. Had it been applied in 1980 it can be seen that results would have been quite different by giving an advantage to the improver States, thus giving encouragement to increased participation — one of the basic aims of this great contest.

Yours sincerely,

G. H. Cranby VK3GI [ex VK7GC.]

POINT ASSESSMENT TABLE

State	VK1	VK2	VK3	VK4	VK5	VK6	VK7
1980 ratio	.2114	.0768	.0553	.1402	.2625	.2334	.3911
Average ratio	.2633	.0517	.0464	.1895	.2805	.1747	.2122
Variation	.0629	1.485	1.192	.7400	.0360	1.279	1.843
Point score	21229	61138	51820	72730	105677	78371	46028
Assessed score	17075	90790	61768	55820	95820	100237	84830
Position	7	3	5	6	2	1	4
1980 position	6	5	7	4	1	2	3

# SILENT KEYS

It is with deep regret that we record the passing of —

Mr. R. F. (ROY) STEVENS, MBE G2BVN  
Mr. R. A. WHITING VK3MZ  
Mr. A. F. LEVERSHA VK3AER

# OBITUARY

R. A. WHITING VK3MZ

On the 14th September, 1981, Reginald Ambrose Whiting, the well-styled "Voice of Preston", died at the age of 70.

Reg was born in Adelaide, was educated at Pulteney Grammar School, gained his AOPC (No. 888) on the 25th August, 1932, and was issued the call sign VK5MZ.

Migrating later to Victoria, Reg exchanged that call sign for VK3MZ, and was a constant operator on 40 metres and, to a lesser extent, on 2 metres. Until comparatively recently, Reg built his own equipment, in which he took great pride. However, when a friend died several years ago he acquired a FT101B and a converted car phone, which later he used on 2 metres FM.

In addition to his amateur radio activities, Reg was a keen gardener, and frequently talked on air about his vegetables.

A member of the Radio Amateurs Old Timers' Club, he had only one year to go to become eligible for the Club's 50-year Seal.

Reg was also a member of the North Suburban Amateur Group, which organisation he joined shortly after its inception in 1949, and was held in high regard by the members.

A man with a very keen sense of humour, Reg really enjoyed a joke against himself, as was seen in the antics of the 3 Rs — Reg, Russ (VK3AJX deceased) and Rainbow (VK3JR), who were inseparable in the 1950s.

Reg's only child and daughter, Helen, died suddenly some years ago, and he never recovered from this loss.

Te Gladie, his XYL, probably equally well known from his constant references to her, we extend our sincere sympathy on her loss. To those who knew him, the amateur bands will never be quite the same without Reg Whiting.

John Ireland VK3AJJ.

# HAMADS

- Eight lines free to all WIA members 59 p 3 cm for non-members.
- Copy in typescript please or in block letters to P.O. Box 150, Toorak, Vic. 3142.
- Repeats may be charged at full rates.
- Closing date: 1st day of the month preceding publication. Cancellations received after about 12th of the month cannot be processed.
- OTHER means address is correct as set out in the WIA 1979 Call Book.

## FOR SALE

Icom IC761 Tcvr, complete with IC701 PS and Electret desk mic. ICSM2, exc cond., \$800. David VK3ADW, QTHR. Ph. (53) 857 8346 AM.

Kenwood TS820 Tcvr, as new, MC50 mic., 500 Hz CW filter, owner and workshop manuals, spare valves, \$775. VK2GE. Ph. (043) 92 4900.

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HealthKit HW101, good cond., power supply, speaker and hand mic., \$350, ONO. C. Dudding VK6KCD, 12 Daphne Street, Narrogin 6312, W.A. Ph. (09) 271 0660.

FDK multi-quartz 16 2m FM crystal controlled Txcrv, repeaters 1 to 8 and simplex channels 40 and 50 fitted, expandable to 23 ch. plus two priority, all accessories, books and original packing, \$190, ONO. VK3KOK (QTHR 1980 VK5ZMF/NCY). Ph. (08) 261 1210.

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2m FM Xc Crystals, 10 MHz, suits 2 MHz IF frequency, simplex 49 repeater channel 1-R2-R6, \$5 ea. D. M. McConnell VK3YNB, QTHR.

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IC22S, complete accessories, mint new and unused, \$250. VK3ZSV, QTHR. Ph. (03) 596 3668.

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Icom IC701, late factory noise blanker, fan mod., loc. as new, carton, manuals, \$750; Dentron MLA 2500 with vernier controls, as new, carton, manuals, \$500; Dentron super tuner plus, \$170; Daiwa FR 560 speech processor, \$70; Tano 7000 5 com. computer RTTY manuals, \$700; Genronics Pt printer to sell, \$350. Ph. (02) 67 4648.

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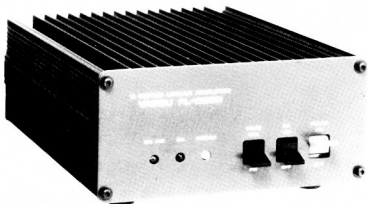
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